Number, Size Composition and Food of Larval and Juvenile Fish Caught with a Two-Boat Surface Trawl in the Strait of Georgia 1968, 1969, and 1973

Skip McKinnell and R. Ian Perry

Fisheries & Oceans Canada
Pacific Biological Station
3190 Hammond Bay Rd.
Nanaimo, B.C. V9R 5K6
Canada

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Skip McKinnell[1] and R. Ian Perry

Fisheries & Oceans Canada
Pacific Biological Station
3190 Hammond Bay Road
Nanaimo, B.C. V9R 5K6
Canada

[1]Salmoforsk International Environmental Consulting, Victoria, BC

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ABSTRACT

During the Fraser Plume Study that began in the 1960s, larval and juvenile fishes were caught by a trawl net towed between two boats in the Strait of Georgia during spring and summer from 1966 to 1969 and in 1973. While the data obtained from sampling in 1966 and 1967 were published in the Manuscript Report Series of the Fisheries Research Board of Canada, none of the data collected in 1968, 1969 and 1973 were published. A volunteer effort led to the resurrection of these data from magnetic tapes, formerly stored in the electronic archives of the Pacific Biological Station. The data included station locations, times and dates, sampling effort, fish catches, lengths and body weights of individual fish taken from subsamples of the catch. Quantitative measures of total stomach contents, prey species identification and prey size were available only for the first cruise in 1968 whereas stomach content data for 1966 and 1967 had been published shortly after they were collected.

RÉSUMÉ

Au cours de l'étude Plume Fraser qui a commencé dans les années 1960, les poissons larvaires et juvéniles ont été capturés par un chalut remorqué entre deux bateaux dans le détroit de Georgia au cours du printemps et de l'été 1966-1969 et en 1973. Bien que les données obtenues à partir de l'échantillonnage en 1966 et 1967 ont été publiés dans la série Manuscrit Rapport du Conseil de recherches sur les pêches du Canada, aucune des données recueillies en 1968, 1969 et 1973 ont été publiés. Un effort bénévole a conduit à la résurrection de ces données à partir de bandes magnétiques, anciennement stockés dans les archives électroniques de la Station biologique du Pacifique. Les données comprenaient l'emplacement des stations, les heures et les dates, l'effort d'échantillonnage, les prises de poissons, les longueurs et les poids corporels de chaque poisson prélevé sur un sous-échantillon des prises. Les mesures quantitatives du total contenu de l'estomac, l'identification des espèces proies et la taille des proies étaient disponibles que pour la première croisière en 1968 alors que les données de contenu de l'estomac pour 1966 et 1967 ont été publiés peu de temps après qu'ils ont été recueillis.

1.0. INTRODUCTION

The data in this report were collected as part of the *Fraser Plume Study* in the southern Strait of Georgia (with a parallel study in Saanich Inlet) by scientists at the Pacific Biological Station (Parsons, Barraclough, Robinson, Fulton, Stevens) during the era when it was under the jurisdiction of the Fisheries Research Board of Canada (disbanded in 1974). Summaries of fish catches, their prey, and environmental data collected in the Strait of Georgia in 1966 and 1967 and in Saanich Inlet in 1966 and 1968 were published shortly after their collection (Fisheries Research Board Manuscript Report Series: Vols. 922, 926, 928, 940, 964, 972, 1003, 1004, and 1012) under the general title "Number, size, composition and food of larval and juvenile fish caught with a two-boat surface trawl in the Strait of Georgia, *date*." One of these (No. 926) was the report of a cruise that used an Isaacs-Kidd trawl instead of a two-boat trawl. The authors of the published reports included W.E. Barraclough, J.D. Fulton, and D.G. Robinson. The present report includes data that were obtained by sampling in the Strait of Georgia in 1968, 1969, and 1973 but were never reported.

Over 670,000 young-of-year fish were caught in the Strait of Georgia during 5 sampling years and most of them were oolichan (*Thaleichthys pacificus*). More than 40,000 fish were measured for length, and about 10% of those were also weighed. Of these, over 4000 stomachs were examined between 1966 and the first cruise of 1968. Stomach contents were not determined in the latter parts of 1968 sampling or thereafter. Animals found in the stomachs were identified, mostly to species, some to stage, and their lengths were measured. Taxonomic resolution of the prey appears to have improved when John Fulton got involved after the first few cruises. Zooplankton densities in surface waters were often collected at the same location as the fish tows. The purpose was to compare the diversity and abundance of species in the environment where the fish were caught with the contents of their stomachs. Electronic versions of the plankton samples have not been found, so the only data available are those in the old manuscript reports. The key point is that the fish data were, for the most part, put on the shelf when the principals left or retired. Peer-reviewed interpretations of these data have appeared only once in a note published in the primary literature (Barraclough 1967).

The electronic versions of the data were found on two tapes (24913, 24915) in the PBS magnetic tape firesafe where they were placed in the 1970s after all of the investigators had either retired or left PBS. The date when the tapes were created is unknown, but perhaps as early as 1974 as that was the year the first computer was installed. Between 1980 and 1999, the tapes were never accessed. Magnetic tape deteriorates with age and lack of use, so at least some of the tapes were copied to new media during the late 1980s and early 1990s.

When this data report was written, copies of the original and resurrected data were available at the Strait of Georgia data centre at UBC (www.sogdatacentre.ca).

2.0. METHODS

2.1. TRAWL OPERATIONS

Larval and juvenile fish were caught by a surface trawl towed between two vessels. This trawl was designed to catch adult, juvenile and larval fish, as well as zooplankton in the same tow. The mouth opening of the net measured 20 ft (6.1 m) wide by 10 ft (3m) deep, of which about 1.5 ft (0.5 m) is above the water. The overall length of the tapering body and codend was 58 ft (17.7 m). The codend was 6 ft wide by 4 ft deep (1.8 m x 1.2 m) at the mouth, its upper surfce being 1 to 2 ft (about 0.5 m) under water, and it tapered to a blunt end about 2.5 ft (76 cm) in diameter. Three mesh sizes of knotless nylon netting were used in its construction: 2 inch (5 cm) and 1 inch (2.5 cm) stretched mesh in the body and 0.5 inch (1.3 cm) in the codend. Most adult and larger juvenile fish were caught in the codend. A trap constructed of 0.5 inch mesh at the front of the codend prevented their escape.

A standard Hensen plankton net, 28.75 inches (73 cm) in diameter at the mouth, was secured to a special panel of netting at the aft end of the 0.5 inch mesh codend. Larval fish and zooplankton were thus caught separately and undamaged in the 351 micron mesh (measured on the bar) Hensen net and could be removed separately from the adult fish.

The net was towed at 3 knots along the surface by two vessels towing parallel with the net between. Vessel heading was reported from 1966 to 1968 but not in 1969 and 1973. The vessels were held apart at a fixed distance of 150 feet, by a length of 3-4" diameter polypropylene rope. The lateral sides of the net were secured to steel pipes, weighted at the bottom end, and thus the mouth of the net was held open vertically in the water when the net was towed. Barraclough (1967) includes a good description of sampling.

2.2. MEASUREMENTS OF LARVAL FISH AND INVERTEBRATES

2.2.1. Fishes

The length of all fish was taken from the most anterior part of the snout of upper lip to the end of the central rays of the caudal fin. This measurement was applied to all fish whether or not the caudal fin was rounded, truncate or forked.

2.2.2. Non-fish prey

For the length of copepods it must be noted that only the globular anterior portion of the body or metasome length was taken. Often the narrow posterior portion or urosome was found damaged or partly digested in the stomachs of fish. Total length was taken of all other invertebrates found in the stomachs.

2.2.3. Prey size-class codes

The electronic records have a single byte integer to represent prey size-class. During the early stages of reconstruction of the database, the size ranges that applied to each code were compared with the lengths of individuals in small samples were reported. The length of one individual fish in the printed report, could be compared with the code applied to that fish in the electronic record. If two fishes of a species were caught, the length range was reported in the printed version and one or two codes would appear in the electronic record: one if they were the same length and two if they fell into different size-classes. A table of all prey size codes used reveals values from blank, zero, 0, 1, ..., 9. The interpretation of prey size-class intervals was clarified when a table in Robinson (1969) reported prey taxa as rows and prey size-classes as columns, the range of sizes (mm.) was indicated for each column.

In the data tables of Section 4 of this report, an estimated length (mm.) has been reported for each prey item if its size-class was reported in the database. In reality, only the length interval is known so these lengths were generated by randomly drawing a value from within the size-class interval and rounding it to the nearest tenth of a millimetre. All lengths within the interval were considered to be equally likely to be the true length.

Table 1. Detection of size-class codes by comparing printed report data with electronic records (middle column) and using size ranges used by Robinson (1969).

Size Code	Report-Data comparison	Robinson (1969)
blank		
0		0.5
1	1	1
2	2	1.5
3	3	3.5
4	4	5
5	8	8
6	16	15
7	25	>15
8	40	
9	>40	

2.2.4. Egg size-class codes

The prey size-class coding for eggs differs from that above. Egg size-classes were coded as part of the taxonomic code where the letter 'I' indicated an egg (I01...I99).

Table 2. Egg size codes

Egg size code	Low size interval	High size interval
1	0.001	0.060
2	0.061	0.100
3	0.101	0.160
4	0.161	0.250
5	0.251	0.300
6	0.301	0.400
7	0.401	0.5

2.2.5. Taxonomy

Fish taxonomic codes were interpreted from contemporary versions of the Hart code, a system of coding based on page numbers in Hart (1977) and used at the Pacific Biological Station since the 1970s. Using contemporary names of species has resulted in a few changes that should be kept in mind when comparing this report with those of the 1960s. *Salmo gairdneri*, for example, has become *Oncorhynchus mykiss*.

As there was no equivalent record for the stomach contents data, the taxonomic names used in this report were taken from the names and codes used in the 1970s. A complete list of codes and taxa, handwritten on IBM coding sheets in the summer of 1973 was used as the primary source.

Occasionally, fish types were recognized and they have been reported when found. The more common were L(arva), J(uvenile) and AD(ult). Occasionally, a T1 and T2 appear and these may reflect two recognizable forms. In the first table reported, these codes are applied to *Lumpenus sagitta* of two different sizes.

3.0. ACKNOWLEDGEMENTS

Jake Schweigert (Pacific Biological Station, retired) and Lu Guan (University of Victoria) helped during the early stages of prey identification and size-class range determination. Figures indicating annual station locations were prepared by Terry A. Curran (Institute of Ocean Sciences, retired).

4.0. REFERENCES

Barraclough, W.E. 1967. Occurrence of larval herring (*Clupea pallasii*) in the Strait of Georgia during July 1966. Journal of the Fisheries Research Board of Canada, 24(11); 2455-2460.

Hart, J. 1973. Pacific fishes of Canada. Bull. Fish. Res. Bd. Can. 180, 740 p.

Robinson, D.G. 1969. Number, size, composition, weight and food of larval and juvenile fish caught with a two-boat surface trawl in the Strait of Georgia July 4-6, 1967. Fish. Res. Bd. Can. Manuscript Report Series No. 1012.

5.0. DATA TABLES

5.1.1. Data for 1968

Location : OFF ACTIVE PASS
Stn. code: 680107

Lat: 48 deg. 53.0 min. N
Long: 123 deg. 16.5 min. W

Date: 4/24/1968

Time set: 0715 Duration: 15. min.

Heading : 25 degrees

Tow number : 7
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		45	45	17.7	12. to 22.	0.286
BATHYMASTER SIGNATUS		1	1	12.0	12. to 12.	0.005
PLATICHTHYS STELLATUS		1	1	11.0	11. to 11.	0.003
AMMODYTES HEXAPTERUS	L	66	66	15.2	7. to 36.	0.544
AMMODYTES HEXAPTERUS	PL	1	1	97.0	97. to 97.	3.100
GASTEROSTEUS ACULEATUS		12	12	68.3	64. to 74.	41.600
LUMPENUS SAGITTA	T1	7	7	14.4	11. to 18.	0.055
LUMPENUS SAGITTA	T2	1	1	34.0	34. to 34.	0.050
SEBASTODES Type 1		5	5	17.6	11. to 24.	0.060
THERAGRA CHALCOGRAMMA		352	120	9.7	4. to 20.	0.770
COTTIDAE (FAMILY)		5	5	6.2	6. to 7.	0.005
SEBASTODES Type 2		67	67	5.5	4. to 9.	0.066

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	14	Empty		
CLUPEA PALLASII	16	Copepod nauplii	6	
CLUPEA PALLASII	18	Empty		
CLUPEA PALLASII	20	Copepodites	2	0.7

THERAGRA CHALCOGRAMMA	5	Copepod nauplii	6	
THERAGRA CHALCOGRAMMA	7	Copepod nauplii	8	
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	5	
		Copepodites	2	0.8
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	10	
		Copepodites	2	0.7
THERAGRA CHALCOGRAMMA	12	Copepod nauplii	2	
		Copepodites	8	0.7
		Pseudocalanus minutus	1	1.5
THERAGRA CHALCOGRAMMA	13	Copepod nauplii	4	
		Copepodites	11	1.0
		Pseudocalanus minutus	2	1.4
GASTEROSTEUS ACULEATUS	64	Pseudocalanus minutus	23	1.4
		Calanus plumchrus	23	2.3
		Calanus plumchrus	2	4.3
GASTEROSTEUS ACULEATUS	65	Pseudocalanus minutus	4	1.4
		Calanus plumchrus	37	2.8
		THERAGRA CHALCOGRAMMA	1	14.3
GASTEROSTEUS ACULEATUS	68	Pseudocalanus minutus	23	1.2
		Calanus plumchrus	43	2.3
		Calanus plumchrus	3	3.7
		Sagitta elegans	10	5.7
GASTEROSTEUS ACULEATUS	74	Pseudocalanus minutus	8	1.5
		Calanus plumchrus	54	2.2
		Caprellidae	1	1.8
		Calanus plumchrus	4	4.9
AMMODYTES HEXAPTERUS	7	Phytoplankton algae	1	
		Eggs - 100-160 microns	1	
		Copepod nauplii	1	
AMMODYTES HEXAPTERUS	10	Copepod nauplii	1	
AMMODYTES HEXAPTERUS	12	Empty		
AMMODYTES HEXAPTERUS	14	Copepod nauplii	1	
AMMODYTES HEXAPTERUS	17	Copepod nauplii	9	
		Copepodites	2	0.9
AMMODYTES HEXAPTERUS	24	Copepod nauplii	2	
		Copepodites	5	
AMMODYTES HEXAPTERUS	35	Copepodites	4	1.0

AMMODYTES HEXAPTERUS	97	Pseudocalanus minutus	5	1.4
		Pseudocalanus minutus	38	1.4
		Calanus plumchrus	48	2.7
		Calanus plumchrus	23	4.4
SEBASTODES Type 2	5	Copepod nauplii	1	
SEBASTODES Type 2	6	Copepod nauplii	4	
SEBASTODES Type 2	7	Copepod nauplii	4	
		Copepodites	1	1.0
SEBASTODES Type 2	9	Copepod nauplii	5	
		Copepodites	7	0.7

Location : MID STRAIT OFF ACTIVE PASS
Stn. code: 680108

Lat: 48 deg. 55.5 min. N
Long: 123 deg. 11.5 min. W

Date: 4/24/1968

Time set: 0820 Duration: 15. min.

Heading : 25 degrees

Tow number : 8
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		147	100	18.0	12. to 26.	0.800
AMMODYTES HEXAPTERUS		25	25	20.7	6. to 37.	0.523
LUMPENUS SAGITTA		18	18	31.3	16. to 43.	1.010
SEBASTODES Type 1		1	1	16.0	16. to 16.	0.004
THERAGRA CHALCOGRAMMA		345	0			
SEBASTODES Type 2		25	0			
PLATICHTHYS STELLATUS		5	5	9.0	6. to 15.	0.010
BATHYMASTER SIGNATUS		2	2	11.5	10. to 13.	0.007
CYCLOPTERIDAE (FAMILY)		1	1	6.0	6. to 6.	0.003
RHAMPHOCOTTUS RICHARDSONI		1	1	11.0	11. to 11.	0.008
GASTEROSTEUS ACULEATUS		2	2	65.0	62. to 68.	5.960
ONCORHYNCHUS KETA		3	3	35.0	34. to 36.	0.900

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	14	Empty		
CLUPEA PALLASII	18	Empty		
CLUPEA PALLASII	19	Empty		
CLUPEA PALLASII	23	Empty		

ONCORHYNCHUS KETA	34	Pseudocalanus minutus	18	1.2
ONCORHYNCHUS KETA	35	Pseudocalanus minutus	28	1.2
		Copepodites	1	0.9
		Calanus plumchrus	5	1.6
		Calanus plumchrus	2	4.1
ONCORHYNCHUS KETA	36	Pseudocalanus minutus	17	1.1
		Calanus plumchrus	5	2.6
THERAGRA CHALCOGRAMMA	4	Empty		
THERAGRA CHALCOGRAMMA	5	Empty		
THERAGRA CHALCOGRAMMA	7	Copepod nauplii	12	
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	4	
		Copepodites	2	0.8
THERAGRA CHALCOGRAMMA	11	Copepod nauplii	12	
		Copepodites	8	0.7
THERAGRA CHALCOGRAMMA	12	Copepodites	3	0.9
		Pseudocalanus minutus	7	1.1
THERAGRA CHALCOGRAMMA	13	Copepod nauplii	3	
		Copepodites	3	1.0
		Pseudocalanus minutus	5	1.1
THERAGRA CHALCOGRAMMA	14	Copepodites	5	0.7
		Pseudocalanus minutus	7	1.4
THERAGRA CHALCOGRAMMA	16	Pseudocalanus minutus	8	1.1
THERAGRA CHALCOGRAMMA	20	Copepodites	15	0.9
		Pseudocalanus minutus	7	1.3
		Calanus plumchrus	3	2.1
GASTEROSTEUS ACULEATUS	62	Pseudocalanus minutus	13	1.5
		Calanus plumchrus	44	1.7
		Calanus plumchrus	4	4.1
		Copepodites	1	0.8
		Sagitta elegans	2	10.3
GASTEROSTEUS ACULEATUS	68	Pseudocalanus minutus	1	1.4
		Calanus plumchrus	54	2.2
		Calanus plumchrus	7	4.5
AMMODYTES HEXAPTERUS	12	Copepod nauplii	5	
AMMODYTES HEXAPTERUS	16	Copepodites	1	0.6
		Copepod nauplii	2	
AMMODYTES HEXAPTERUS	23	Copepodites	29	0.8

		Copepod nauplii	2	
AMMODYTES HEXAPTERUS	26	Copepodites	33	0.9
AMMODYTES HEXAPTERUS	30	Copepodites	29	0.6
		Pseudocalanus minutus	2	1.3
AMMODYTES HEXAPTERUS	37	Copepodites	50	0.9
		Pseudocalanus minutus	3	1.2
SEBASTODES Type 2	5	Copepod nauplii	2	
SEBASTODES Type 2	6	Empty		

Location : OFF POINT ROBERTS
Stn. code: 680109

Lat: 48 deg. 57.5 min. N
Long: 123 deg. 6.0 min. W

Date: 4/24/1968

Time set: 0905 Duration: 15. min.

Heading : 350 degrees

Tow number : 9
Cruise : 1
Vessel : A.P. Knight

Remarks : Two boat surface trawl

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
AMMODYTES HEXAPTERUS	L	42	21	14.7	6. to 20.	0.113
AMMODYTES HEXAPTERUS	PL	490	113	28.8	22. to 37.	4.590
CLUPEA PALLASII		228	114	17.8	10. to 24.	0.844
THALEICHTHYS PACIFICUS	L	140	70	16.1	8. to 23.	0.390
THALEICHTHYS PACIFICUS	PL	30	1	30.0	30. to 30.	0.037
ONCORHYNCHUS KETA		13	13	32.8	31. to 38.	3.141
GASTEROSTEUS ACULEATUS		1	1	67.0	67. to 67.	3.480
PSYCHROLUTES PARADOXUS		15	15	18.8	15. to 22.	2.200
LUMPENUS SAGITTA		48	48	37.6	25. to 44.	4.400
CYCLOPTERIDAE (FAMILY)		1	1	9.0	9. to 9.	0.007
THERAGRA CHALCOGRAMMA		25	25	7.8	4. to 20.	0.162
PLATICHTHYS STELLATUS		28	28	5.1	4. to 7.	0.016
SEBASTODES Type 2		15	15	5.6	5. to 7.	0.011
PLEURONECTIDAE (FAMILY)		17	17	5.7	4. to 9.	0.012
RHAMPHOCOTTUS RICHARDSONI		1	1	16.0	16. to 16.	0.068
AGONIDAE (FAMILY)		2	2	7.0	7. to 7.	0.004
CRYPTACANTHODES ALEUTENSIS		1	1	14.0	14. to 14.	0.008
BATHYMASTER SIGNATUS		2	2	11.0	8. to 14.	0.009
SEBASTODES Type 1		1	1	24.0	24. to 24.	0.021
STICHAEIDAE (FAMILY)		1	1	13.0	13. to 13.	0.008
COTTIDAE (FAMILY)	T1	1	1	6.0	6. to 6.	0.001
COTTIDAE (FAMILY)	T2	1	1	8.0	8. to 8.	0.005
COTTIDAE (FAMILY)	T3	1	1	4.0	4. to 4.	0.001
COTTIDAE (FAMILY)		17	17	5.9	3. to 9.	0.025

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	16	Empty		
CLUPEA PALLASII	17	Copepod nauplii	17	
		Copepodites	3	
CLUPEA PALLASII	18	Copepod nauplii	1	
		Copepodites	1	
CLUPEA PALLASII	18	Copepod nauplii	2	
CLUPEA PALLASII	19	Empty		
CLUPEA PALLASII	21	Copepod nauplii	2	
CLUPEA PALLASII	23	Copepod nauplii	2	
		Copepodites	1	0.7
ONCORHYNCHUS KETA	31	Calanus plumchrus	8	1.9
		Cladocera - Podon	1	0.7
		Copepodites	6	0.7
		Centropages abdominalis	1	1.1
		Calliopius sp.	6	1.1
		Epilabidocera amphitrites	1	2.8
ONCORHYNCHUS KETA	31	Calanus plumchrus	14	2.9
		Copepodites	1	0.9
		Copepoda	2	1.2
ONCORHYNCHUS KETA	31	Limacina helicina	1	0.9
		Copepoda	4	1.2
ONCORHYNCHUS KETA	32	Calanus plumchrus	2	2.8
		Cirripedia (nauplius)	1	0.6
		Copepoda	10	1.3
ONCORHYNCHUS KETA	32	Calanus plumchrus	14	1.9
ONCORHYNCHUS KETA	33	Calanus plumchrus	5	1.7
		Copepoda	1	1.3
		Centropages abdominalis	2	1.3
ONCORHYNCHUS KETA	33	Calanus plumchrus	12	3.5
		Epilabidocera amphitrites	1	2.5
ONCORHYNCHUS KETA	34	Calanus plumchrus	12	2.8

		Copepoda	4	1.4
		Copepod - unknown	1	1.5
		Calanus pacificus	3	2.5
ONCORHYNCHUS KETA	38	Calanus plumchrus	9	2.1
		Calliopius sp.	1	1.1
THALEICHTHYS PACIFICUS	11	Copepod nauplii	2	
THALEICHTHYS PACIFICUS	15	Empty		
THALEICHTHYS PACIFICUS	17	Copepodites	1	0.9
THALEICHTHYS PACIFICUS	18	Empty		
THALEICHTHYS PACIFICUS	20	Empty		
THALEICHTHYS PACIFICUS	30	Copepodites	1	0.9
		Calanus plumchrus	1	1.4
THERAGRA CHALCOGRAMMA	5	Copepod nauplii	4	
THERAGRA CHALCOGRAMMA	5	Copepod nauplii	5	
THERAGRA CHALCOGRAMMA	11	Copepodites	3	0.7
		Copepoda	2	1.2
THERAGRA CHALCOGRAMMA	20	Copepodites	1	0.7
		Copepoda	13	1.1
		Calanus plumchrus	2	1.7
GASTEROSTEUS ACULEATUS	0	Limacina helicina	1	0.8
		Pseudocalanus minutus	8	1.5
		Calanus plumchrus	85	1.7
		Calanus plumchrus	14	4.4
LUMPENUS SAGITTA	25	Copepodites	5	0.8
		Pseudocalanus minutus	5	1.4
LUMPENUS SAGITTA	32	Copepodites	1	0.8
		Pseudocalanus minutus	11	1.2
LUMPENUS SAGITTA	36	Copepodites	9	0.7
		Pseudocalanus minutus	10	1.4
LUMPENUS SAGITTA	43	Copepodites	10	0.8
		Pseudocalanus minutus	22	1.4
		Calanus plumchrus	1	4.1
AMMODYTES HEXAPTERUS	12	Copepod nauplii	20	
AMMODYTES HEXAPTERUS	18	Copepod nauplii	15	
		Copepodites	4	0.9
		Acartia longiremis	1	1.2
AMMODYTES HEXAPTERUS	23	Pseudocalanus minutus	5	1.4

AMMODYTES HEXAPTERUS	27	Pseudocalanus minutus	9	1.4
		Centropages abdominalis	1	1.3
AMMODYTES HEXAPTERUS	29	Calanus plumchrus	5	1.3
		Copepoda	1	3.0
AMMODYTES HEXAPTERUS	32	Calanus plumchrus	6	1.3
AMMODYTES HEXAPTERUS	35	Cirripedia (nauplius)	9	
		Copepodites	5	0.7
		Calanus plumchrus	1	1.4
		Oikopleura sp.	12	1.3
PLATICHTHYS STELLATUS	4	Eggs - 100-160 microns	1	
		Copepod nauplii	1	
PLATICHTHYS STELLATUS	5	Copepod nauplii	14	
PLATICHTHYS STELLATUS	7	Copepod nauplii	10	

Location : OFF BOUNDARY BAY
Stn. code: 680110

Lat: 48 deg. 57.0 min. N
Long: 122 deg. 55.0 min. W

Date: 4/24/1968

Time set: 1015 Duration: 15. min.

Heading : 250 degrees

Tow number : 10
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ONCORHYNCHUS KETA		1	1	33.0	33. to 33.	0.242
GASTEROSTEUS ACULEATUS		5	5	69.0	66. to 73.	17.000
CLUPEA PALLASII		161	161	20.9	15. to 26.	2.550
THALEICHTHYS PACIFICUS		14	14	16.7	13. to 21.	0.089
LEPIDOPSETTA BILINEATA		3	3	13.7	9. to 20.	0.049
AGONIDAE (FAMILY)		1	1	12.0	12. to 12.	0.005
CYCLOPTERIDAE (FAMILY)		1	1	9.0	9. to 9.	0.009
PLEURONECTIDAE (FAMILY)		1	1	6.0	6. to 6.	0.001
AMMODYTES HEXAPTERUS		94	94	25.8	11. to 42.	3.300
LUMPENUS SAGITTA		7	7	35.6	29. to 42.	0.525
SEBASTODES Type 1		13	13	15.7	8. to 19.	0.145
SEBASTODES Type 2		3	3	5.0	5. to 5.	0.002
COTTIDAE (FAMILY)	T1	2	2	6.0	6. to 6.	0.002
CLINOCOTTUS ACUTICEPS		5	5	10.8	8. to 13.	0.082
PSYCHROLUTES PARADOXUS		5	5	17.2	15. to 19.	0.450

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	17	Copepod nauplii	2	

CLUPEA PALLASII	17	Empty		
CLUPEA PALLASII	20	Copepoda	4	0.6
CLUPEA PALLASII	21	Copepoda	5	0.9
CLUPEA PALLASII	22	Copepoda	3	0.7
CLUPEA PALLASII	24	Copepoda	8	0.7
CLUPEA PALLASII	26	Eggs - 100-160 microns	14	
		Copepoda	7	1.0
ONCORHYNCHUS KETA	33	Calanus plumchrus	1	3.3
THALEICHTHYS PACIFICUS	13	Empty		
THALEICHTHYS PACIFICUS	16	Copepod nauplii	1	
		Copepodites	1	0.6
		Copepoda	1	1.4
THALEICHTHYS PACIFICUS	21	Copepodites	1	0.9
		Copepoda	2	1.2
GASTEROSTEUS ACULEATUS	66	Epilabidocera amphitrites	8	2.5
		Calliopius sp.	3	1.6
		Unknown crab	1	2.2
		Brachyura - megalops stage	3	4.0
GASTEROSTEUS ACULEATUS	69	Calliopius sp.	1	1.4
		Oikopleura sp.	60	1.2
		Calanus plumchrus	1	2.9
GASTEROSTEUS ACULEATUS	73	Copepoda	5	1.2
		Acartia longiremis	11	1.1
		Oikopleura sp.	2	1.3
		Calanus plumchrus	1	3.1
		Epilabidocera amphitrites	2	1.8
		Calliopius sp.	2	3.5
AMMODYTES HEXAPTERUS	13	Copepod nauplii	6	
		Copepodites	1	0.7
AMMODYTES HEXAPTERUS	16	Eggs - 160-250 microns	1	
		Copepod nauplii	4	
		Copepoda	1	1.3
AMMODYTES HEXAPTERUS	20	Empty		
AMMODYTES HEXAPTERUS	21	Copepoda	4	1.3
AMMODYTES HEXAPTERUS	27	Copepodites	1	0.7
		Copepoda	12	1.2
AMMODYTES HEXAPTERUS	28	Copepoda	14	1.3

AMMODYTES HEXAPTERUS	33	Eggs - 100-160 microns	40	
		Copepoda	6	1.2
AMMODYTES HEXAPTERUS	36	Eggs - 100-160 microns	30	
		Copepoda	4	1.5
		Eggs - Pisces	2	1.3

Location : OFF TSAWWASSEN DOCK
Stn. code: 680111

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 10.0 min. W

Date: 4/24/1968

Time set: 1135 Duration: 15. min.

Heading : 270 degrees

Tow number : 11
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ONCORHYNCHUS KETA		10	10	33.9	31. to 37.	2.612
ONCORHYNCHUS NERKA		5	5	83.6	79. to 89.	31.100
GASTEROSTEUS ACULEATUS		4	4	67.3	63. to 72.	13.800
OPHIODON ELONGATUS		1	1	28.0	28. to 28.	0.115
PSYCHROLUTES PARADOXUS		1	1	22.0	22. to 22.	0.190
CLUPEA PALLASII		370	100	19.5	16. to 26.	1.220
THALEICHTHYS PACIFICUS		140	40	17.1	12. to 22.	0.260
AMMODYTES HEXAPTERUS	L	63	20	18.7	14. to 26.	0.272
AMMODYTES HEXAPTERUS	PL	481	100	30.7	21. to 41.	5.380
LUMPENUS SAGITTA		36	36	39.6	32. to 45.	3.650
SEBASTODES Type 1		3	3	25.7	25. to 27.	0.104
STICHAEIDAE (FAMILY)		3	3	19.7	15. to 27.	0.092
CLINOCOTTUS ACUTICEPS		2	2	11.5	11. to 12.	0.031
LEUROGLOSSUS SCHMIDTI		1	1	10.0	10. to 10.	0.002
PLEURONECTIDAE (FAMILY)		1	1	12.0	12. to 12.	0.013
SEBASTODES Type 2		1	1	8.0	8. to 8.	0.003
CYCLOPTERIDAE (FAMILY)		1	1	16.0	16. to 16.	0.032
PLATICHTHYS STELLATUS		1	1	6.0	6. to 6.	0.005
COTTIDAE (FAMILY)		1	1	6.0	6. to 6.	0.005

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	16	Copepod nauplii	6	
CLUPEA PALLASII	18	Empty		
CLUPEA PALLASII	19	Copepod nauplii	3	
CLUPEA PALLASII	21	Copepoda	3	1.2
CLUPEA PALLASII	23	Copepoda	5	1.1
CLUPEA PALLASII	25	Copepoda	1	1.2
ONCORHYNCHUS KETA	31	Copepoda	5	1.4
		Calanus plumchrus	5	2.2
		Calanus pacificus	1	3.2
ONCORHYNCHUS KETA	33	Copepoda	12	1.3
		Cladocera - Podon	1	0.8
		Calliopius sp.	2	1.3
		Calanus plumchrus	2	2.6
ONCORHYNCHUS KETA	34	Copepoda	3	1.4
		Copepodites	2	0.7
		Calanus plumchrus	2	2.7
		Brachyura zoea stage	1	3.2
		Unknown crab	1	1.8
ONCORHYNCHUS KETA	35	Copepoda	40	1.1
		Copepodites	10	0.6
		Calliopius sp.	5	1.4
		Calanus plumchrus	2	1.8
		Calanus plumchrus	2	6.2
		Culicidae	1	1.8
ONCORHYNCHUS KETA	37	Copepoda	8	1.5
		Calliopius sp.	6	1.2
		Calanus plumchrus	8	2.6
		Calanus pacificus	3	2.2
ONCORHYNCHUS NERKA	79	Copepoda	2	1.5
		Calliopius sp.	1	1.2
		Calanus plumchrus	26	2.9

		Calanus pacificus	4	2.0
		Calanus plumchrus	65	4.0
ONCORHYNCHUS NERKA	80	Copepoda	2	1.3
		Calanus plumchrus	2	1.8
		Calanus plumchrus	3	4.6
		AMMODYTES HEXAPTERUS	9	31.3
ONCORHYNCHUS NERKA	84	Calanus plumchrus	5	2.2
		Calanus pacificus	2	1.9
		Calanus plumchrus	20	4.1
		AMMODYTES HEXAPTERUS	4	38.2
ONCORHYNCHUS NERKA	86	Copepoda	225	1.4
		Calanus plumchrus	15	2.2
		Calanus pacificus	4	2.1
		Brachyura zoea stage	3	3.3
		Calanus plumchrus	70	4.3
		PLATICHTHYS STELLATUS	1	3.6
		Unknown crab	4	2.7
		OPHIODON ELONGATUS	1	30.6
ONCORHYNCHUS NERKA	89	Copepoda	10	1.3
		Calanus plumchrus	3	4.3
		AMMODYTES HEXAPTERUS	6	25.6
		STICHAEIDAE (FAMILY)	1	17.7
THALEICHTHYS PACIFICUS	16	Copepod nauplii	1	
THALEICHTHYS PACIFICUS	18	Empty		
THALEICHTHYS PACIFICUS	20	Empty		
GASTEROSTEUS ACULEATUS	63	Copepod nauplii	65	1.2
		Calanus plumchrus	12	2.1
		Calanus pacificus	3	1.8
		Calanus plumchrus	35	4.2
GASTEROSTEUS ACULEATUS	72	Copepod nauplii	120	1.4
		Conchoecia pseudohamata	1	0.9
		Limacina helicina	1	1.0
		Calliopius sp.	3	1.4
		Calanus plumchrus	25	2.1
		Calanus pacificus	5	2.7
		Unknown crab	2	2.3
		Calanus plumchrus	40	4.0

LUMPENUS SAGITTA	38	Copepoda	8	1.1
LUMPENUS SAGITTA	42	Copepoda	10	1.4
AMMODYTES HEXAPTERUS	15	Copepod nauplii	10	
		Copepodites	2	0.9
AMMODYTES HEXAPTERUS	20	Copepod nauplii	3	
		Copepodites	5	0.8
		Copepoda	1	1.2
AMMODYTES HEXAPTERUS	24	Empty		
AMMODYTES HEXAPTERUS	28	Eggs - 100-160 microns	1	
		Copepodites	9	0.9
		Copepoda	2	1.2
AMMODYTES HEXAPTERUS	31	Copepodites	3	1.0
		Copepoda	9	1.3
AMMODYTES HEXAPTERUS	35	Eggs - 100-160 microns	2	
		Copepodites	5	1.0
		Copepoda	19	1.4
		Calanus plumchrus	8	2.1
AMMODYTES HEXAPTERUS	41	Copepoda	9	1.3
		Calanus plumchrus	5	2.1

Location : OFF CANOE PASS BUOY
Stn. code: 680112

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 15.0 min. W

Date: 4/24/1968

Time set: 1250 Duration: 15. min.

Heading : 270 degrees

Tow number : 12
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ONCORHYNCHUS KETA		6	6	33.0	30. to 38.	1.552
ONCORHYNCHUS NERKA		6	6	82.0	75. to 85.	33.100
THALEICHTHYS PACIFICUS		15	15	68.4	64. to 72.	25.200
PSYCHROLUTES SIGALUTES		1	1	47.0	47. to 47.	4.400
GASTEROSTEUS ACULEATUS		1	1	68.0	68. to 68.	3.600
OPHIODON ELONGATUS		3	3	17.7	13. to 21.	0.067
CRYPTACANTHODES ALEUTENSIS		4	4	18.3	15. to 21.	0.090
AMMODYTES HEXAPTERUS	L	160	40	23.5	13. to 32.	0.886
AMMODYTES HEXAPTERUS	PL	560	98	34.6	26. to 44.	8.410
LUMPENUS SAGITTA	T1	8	2	22.5	20. to 25.	0.035
LUMPENUS SAGITTA	T2	176	44	41.5	32. to 47.	5.290
LEUROGLOSSUS SCHMIDTI		8	4	12.0	11. to 13.	0.014
CLUPEA PALLASII		1380	200	21.8	16. to 27.	3.400
THALEICHTHYS PACIFICUS		476	119	34.0	13. to 72.	0.450
SEBASTODES Type 1		24	6	24.8	22. to 28.	0.186
STICHAEIDAE (FAMILY)		4	1	20.0	20. to 20.	0.020
COTTIDAE (FAMILY)		21	21	7.9	6. to 10.	0.064
THERAGRA CHALCOGRAMMA		3	3	4.7	4. to 5.	0.002

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	17	Empty		
CLUPEA PALLASII	18	Copepod nauplii	1	
CLUPEA PALLASII	18	Empty		
CLUPEA PALLASII	19	Empty		
CLUPEA PALLASII	19	Empty		
CLUPEA PALLASII	21	Copepod nauplii	3	
CLUPEA PALLASII	22	Copepodites	3	0.7
CLUPEA PALLASII	23	Pseudocalanus minutus	1	1.3
CLUPEA PALLASII	24	Empty		
CLUPEA PALLASII	25	Pseudocalanus minutus	1	1.2
		Acartia longiremis	2	1.4
		Calanus pacificus	1	2.6
CLUPEA PALLASII	27	Copepodites	7	0.7
		Pseudocalanus minutus	4	1.5
		Acartia longiremis	4	1.3
		Calanus pacificus	1	3.3
ONCORHYNCHUS KETA	30	Copepodites	3	0.9
		Pseudocalanus minutus	8	1.1
		Epilabidocera amphitrites	1	1.2
		Calanus plumchrus	2	2.7
		Calanus plumchrus	1	4.8
ONCORHYNCHUS KETA	32	Pseudocalanus minutus	4	1.2
		Epilabidocera amphitrites	1	1.4
		Calanus plumchrus	4	2.6
ONCORHYNCHUS KETA	34	Copepodites	4	0.6
		Pseudocalanus minutus	20	1.2
		Epilabidocera amphitrites	3	1.4
		Calanus plumchrus	10	3.0
		Calanus pacificus	2	2.7
		Calanus plumchrus	1	4.0
ONCORHYNCHUS KETA	38	Calanus plumchrus	3	3.1

		Calliopius sp.	2	2.3
		Calanus plumchrus	2	3.8
		THERAGRA CHALCOGRAMMA	1	14.8
ONCORHYNCHUS NERKA	75	Calanus plumchrus	55	2.5
		Calanus pacificus	15	2.2
		Calanus plumchrus	90	4.1
		Euphausiacea	1	14.9
		THERAGRA CHALCOGRAMMA	1	11.0
ONCORHYNCHUS NERKA	79	Pseudocalanus minutus	2	1.2
		Calanus plumchrus	5	3.3
		Calanus pacificus	1	2.1
		Calliopius sp.	2	2.2
		AMMODYTES HEXAPTERUS	1	15.4
		AMMODYTES HEXAPTERUS	3	27.3
ONCORHYNCHUS NERKA	84	Calanus plumchrus	8	2.5
		Calanus pacificus	2	3.3
		Calliopius sp.	1	2.7
		Calanus plumchrus	30	4.8
		Euphausiacea	1	9.3
ONCORHYNCHUS NERKA	84	Calanus plumchrus	40	3.0
		Calanus pacificus	10	2.7
		Calliopius sp.	1	2.8
		Calanus plumchrus	70	4.6
		CLUPEA PALLASII	1	23.3
		OPHIODON ELONGATUS	8	3.3
		AMMODYTES HEXAPTERUS	1	29.0
ONCORHYNCHUS NERKA	85	Pseudocalanus minutus	1	1.1
		Calanus plumchrus	45	2.0
		Calanus pacificus	15	3.0
		Calliopius sp.	2	3.3
		Brachyura zoea stage	1	3.3
		Calanus plumchrus	35	4.1
		Epilabidocera amphitrites	1	3.9
		Calanus plumchrus	30	1.8
		Calanus pacificus	10	3.3
		Calanus plumchrus	20	4.6
		THERAGRA CHALCOGRAMMA	1	13.5

ONCORHYNCHUS NERKA	85	Brachyura - megalops stage	1	3.8
THALEICHTHYS PACIFICUS	14	Empty		
THALEICHTHYS PACIFICUS	15	Copepod nauplii	1	
		Copepodites	3	
THALEICHTHYS PACIFICUS	17	Copepod nauplii	2	
		Copepodites	1	0.8
THALEICHTHYS PACIFICUS	22	Pseudocalanus minutus	2	1.2
THALEICHTHYS PACIFICUS	64	Pseudocalanus minutus	24	1.3
		Epilabidocera amphitrites	6	1.3
		Calanus plumchrus	10	2.1
		Calanus pacificus	2	2.4
		Calanus plumchrus	1	4.3
THALEICHTHYS PACIFICUS	67	Pseudocalanus minutus	17	1.5
		Epilabidocera amphitrites	4	1.2
		Calanus plumchrus	12	2.2
		Calanus pacificus	4	2.8
		Calanus plumchrus	4	3.8
THALEICHTHYS PACIFICUS	72	Pseudocalanus minutus	11	1.5
		Epilabidocera amphitrites	3	1.4
		Calanus plumchrus	16	1.8
		Calanus pacificus	4	1.7
		Unknown crab	1	1.7
		Calanus plumchrus	16	3.9
LUMPENUS SAGITTA	20	Copepodites	2	0.7
		Pseudocalanus minutus	1	1.2
LUMPENUS SAGITTA	25	Copepod nauplii	1	
		Copepodites	8	1.0
		Pseudocalanus minutus	2	1.2
LUMPENUS SAGITTA	35	Pseudocalanus minutus	3	1.4
		Calanus pacificus	1	2.7
LUMPENUS SAGITTA	41	Pseudocalanus minutus	14	1.4
LUMPENUS SAGITTA	46	Pseudocalanus minutus	2	1.3
AMMODYTES HEXAPTERUS	18	Copepod nauplii	10	
		Copepodites	2	0.8
AMMODYTES HEXAPTERUS	24	Copepodites	5	0.7
		Pseudocalanus minutus	6	1.4
		Epilabidocera amphitrites	1	1.1

AMMODYTES HEXAPTERUS	28	Copepod nauplii	2	
		Copepodites	3	0.6
		Pseudocalanus minutus	4	1.2
		Epilabidocera amphitrites	1	1.4
AMMODYTES HEXAPTERUS	32	Eggs - 100-160 microns	8	
		Copepodites	8	0.9
		Pseudocalanus minutus	8	1.3
		Epilabidocera amphitrites	2	1.3
		Centropages abdominalis	2	1.2
		Calanus plumchrus	2	2.6
AMMODYTES HEXAPTERUS	35	Copepodites	2	0.7
		Pseudocalanus minutus	5	1.2
		Calanus plumchrus	4	3.1
AMMODYTES HEXAPTERUS	39	Microcalanus sp.	2	0.6
		Pseudocalanus minutus	16	1.3
		Epilabidocera amphitrites	4	1.5
		Calanus plumchrus	8	1.8
		Calanus pacificus	3	3.0
AMMODYTES HEXAPTERUS	44	Copepodites	2	0.7
		Pseudocalanus minutus	12	1.2
		Epilabidocera amphitrites	3	1.3
		Calanus plumchrus	16	1.6
		Calanus pacificus	4	2.0
		Calanus plumchrus	1	4.8

Location : OFF KNUCKLE BUOY
Stn. code: 680113

Lat: 49 deg. 5.3 min. N
Long: 123 deg. 19.0 min. W

Date: 4/24/1968

Time set: 1333 Duration: 15. min.

Heading : 315 degrees

Tow number : 13
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ONCORHYNCHUS NERKA		35	35	85.3	77. to 96.	214.700
ONCORHYNCHUS GORBUSCHA		3	3	33.7	33. to 35.	0.770
ONCORHYNCHUS KETA		4	4	35.0	32. to 39.	1.210
GASTEROSTEUS ACULEATUS		3	3	64.3	57. to 69.	8.550
THALEICHTHYS PACIFICUS	L	1	1	70.0	70. to 70.	1.400
AMMODYTES HEXAPTERUS		1	1	96.0	96. to 96.	2.820
CLUPEA PALLASII		675	100	20.3	13. to 25.	1.130
THALEICHTHYS PACIFICUS		875	100	16.3	10. to 25.	0.523
AMMODYTES HEXAPTERUS		530	100	30.6	13. to 43.	5.280
LUMPENUS SAGITTA		122	100	40.6	31. to 47.	13.700
CRYPTACANTHODES ALEUTENSIS		3	3	23.7	16. to 29.	0.138
LEUROGLOSSUS SCHMIDTI		16	16	10.6	7. to 13.	0.021
STICHAEIDAE (FAMILY)		5	5	18.8	18. to 19.	0.080
PSYCHROLUTES SIGALUTES		1	1	18.0	18. to 18.	0.120
HEMILEPIDOTUS SPINOSUS		1	1	26.0	26. to 26.	0.280
THERAGRA CHALCOGRAMMA		13	13	6.1	4. to 11.	0.017
OPHIODON ELONGATUS		2	2	32.5	29. to 36.	0.306
COTTIDAE (FAMILY)		9	9	9.3	7. to 13.	0.057
AGONIDAE (FAMILY)		1	1	15.0	15. to 15.	0.019
CYCLOPTERIDAE (FAMILY)		1	1	11.0	11. to 11.	0.007
PLATICHTHYS STELLATUS		1	1	5.0	5. to 5.	0.001
SEBASTODES Type 2		6	6	5.0	4. to 6.	0.004

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	16	Copepod nauplii	4	
CLUPEA PALLASII	16	Copepod nauplii	6	
CLUPEA PALLASII	19	Copepodites	1	1.0
CLUPEA PALLASII	21	Empty		
CLUPEA PALLASII	22	Copepodites	1	1.0
		Pseudocalanus minutus	1	1.2
CLUPEA PALLASII	24	Copepod nauplii	6	
		Copepodites	3	
		Copepodites	12	0.6
		Pseudocalanus minutus	1	1.2
ONCORHYNCHUS GORBUSCHA	33	Pseudocalanus minutus	1	1.5
		Calanus plumchrus	2	1.9
ONCORHYNCHUS GORBUSCHA	33	Pseudocalanus minutus	5	1.5
		Calanus plumchrus	10	2.3
ONCORHYNCHUS GORBUSCHA	35	Copepodites	1	0.8
		Pseudocalanus minutus	5	1.1
		Calanus plumchrus	7	3.0
		Centropages abdominalis	1	3.1
		Calliopius sp.	2	2.4
ONCORHYNCHUS KETA	32	Empty		
ONCORHYNCHUS KETA	34	Copepodites	6	0.7
		Pseudocalanus minutus	13	1.3
		Calanus plumchrus	12	2.8
ONCORHYNCHUS KETA	35	Copepodites	4	0.7
		Pseudocalanus minutus	9	1.5
		Limacina helicina	2	0.9
		Microcalanus sp.	1	1.2
		Calanus plumchrus	4	1.7
		Calliopius sp.	2	1.8
ONCORHYNCHUS KETA	39	Copepodites	2	0.7
		Pseudocalanus minutus	12	1.4

		Calliopius sp.	1	1.5
		Calanus plumchrus	15	1.8
		Cumacea	1	2.0
ONCORHYNCHUS NERKA	77	Calanus plumchrus	28	3.5
		Calanus plumchrus	17	4.5
		Calliopius sp.	4	3.2
		CRYPTACANTHODES ALEUTENSIS	5	15.6
		AMMODYTES HEXAPTERUS	1	36.3
ONCORHYNCHUS NERKA	81	Calanus plumchrus	18	3.4
		Calanus plumchrus	41	4.6
		Calliopius sp.	2	2.5
		AMMODYTES HEXAPTERUS	1	30.0
ONCORHYNCHUS NERKA	84	Calanus plumchrus	66	2.1
		Calanus plumchrus	110	3.9
		Calliopius sp.	4	3.3
		Pseudocalanus minutus	2	1.2
		Cirripedia (nauplius)	1	3.2
		THERAGRA CHALCOGRAMMA	1	6.2
		AMMODYTES HEXAPTERUS	1	28.7
ONCORHYNCHUS NERKA	87	Calanus plumchrus	50	3.5
		Calanus plumchrus	100	3.8
		CRYPTACANTHODES ALEUTENSIS	2	21.3
ONCORHYNCHUS NERKA	90	Calanus plumchrus	46	2.7
		Calanus plumchrus	92	4.7
		Calliopius sp.	11	2.6
		Brachyura zoea stage	1	3.0
ONCORHYNCHUS NERKA	92	Calanus plumchrus	75	2.1
		Calanus plumchrus	75	4.5
		Calliopius sp.	2	2.0
		Pseudocalanus minutus	4	1.1
ONCORHYNCHUS NERKA	96	Calanus plumchrus	53	1.6
		Calanus plumchrus	30	4.4
		Brachyura - megalops stage	1	4.9
		Epilabidocera amphitrites	15	4.4
		Pseudocalanus minutus	3	1.5
		COTTIDAE (FAMILY)	1	6.0
		THALEICHTHYS PACIFICUS	1	13.4

		LEUROGLOSSUS SCHMIDTI	2	9.2
		Sagitta elegans	1	18.4
		CRYPTACANTHODES ALEUTENSIS	2	20.5
		AMMODYTES HEXAPTERUS	3	36.5
THALEICHTHYS PACIFICUS	12	Copepod nauplii	1	
THALEICHTHYS PACIFICUS	15	Copepodites	1	0.7
THALEICHTHYS PACIFICUS	16	Copepodites	1	0.6
THALEICHTHYS PACIFICUS	18	Copepod nauplii	1	
		Copepodites	3	1.0
THALEICHTHYS PACIFICUS	20	Copepodites	1	0.7
		Pseudocalanus minutus	1	1.4
THALEICHTHYS PACIFICUS	25	Copepodites	2	0.9
		Pseudocalanus minutus	1	1.3
THALEICHTHYS PACIFICUS	70	Calanus plumchrus	9	2.0
		Calanus plumchrus	3	4.7
GASTEROSTEUS ACULEATUS	57	Copepodites	2	0.8
		Pseudocalanus minutus	21	1.2
		Calanus plumchrus	39	1.7
		Calliopius sp.	1	2.0
		Calanus plumchrus	3	4.0
GASTEROSTEUS ACULEATUS	69	Calanus plumchrus	95	2.2
		Calanus plumchrus	2	4.9
		Sagitta elegans	2	18.7
LUMPENUS SAGITTA	33	Copepodites	1	0.8
		Pseudocalanus minutus	7	1.4
LUMPENUS SAGITTA	35	Copepodites	2	0.7
		Pseudocalanus minutus	9	1.4
LUMPENUS SAGITTA	38	Copepodites	10	0.9
		Pseudocalanus minutus	11	1.5
LUMPENUS SAGITTA	41	Copepodites	7	0.6
		Pseudocalanus minutus	14	1.3
LUMPENUS SAGITTA	45	Copepodites	7	0.8
		Pseudocalanus minutus	5	1.1
		Calanus plumchrus	3	2.7
		Calanus plumchrus	1	4.4
LUMPENUS SAGITTA	47	Copepodites	17	1.0
		Pseudocalanus minutus	16	1.1

AMMODYTES HEXAPTERUS	13	Copepodites	1	
AMMODYTES HEXAPTERUS	19	Copepod nauplii	3	
		Copepodites	2	0.6
		Pseudocalanus minutus	1	1.3
AMMODYTES HEXAPTERUS	25	Copepodites	3	0.6
		Pseudocalanus minutus	1	1.5
AMMODYTES HEXAPTERUS	29	Copepodites	9	1.0
		Pseudocalanus minutus	9	1.3
		Calanus plumchrus	1	3.5
AMMODYTES HEXAPTERUS	35	Copepodites	3	0.7
		Pseudocalanus minutus	8	1.3
		Calanus plumchrus	3	3.3
AMMODYTES HEXAPTERUS	39	Copepodites	5	0.8
		Pseudocalanus minutus	23	1.2
		Calanus plumchrus	4	2.9
AMMODYTES HEXAPTERUS	43	Copepodites	7	0.9
		Pseudocalanus minutus	11	1.2
		Calanus plumchrus	6	2.5
		Calanus plumchrus	1	4.3
AMMODYTES HEXAPTERUS	96	Hyperia sp.	5	1.4
		Calanus plumchrus	105	2.1
		Unknown crab	4	2.3
		Calanus plumchrus	38	4.4
		Epilabidocera amphitrites	1	4.9
OPHIODON ELONGATUS	29	Pseudocalanus minutus	10	1.2
		Hyperia sp.	1	1.4
		Calanus plumchrus	7	2.0
OPHIODON ELONGATUS	36	Pseudocalanus minutus	6	1.4

Location : ABOVE SANDHEADS
Stn. code: 680114

Lat: 49 deg. 8.0 min. N
Long: 123 deg. 19.0 min. W

Date: 4/24/1968

Time set: 1412 Duration: 15. min.

Heading : 335 degrees

Tow number : 14
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	42	26	19.6	15. to 23.	0.272
THERAGRA CHALCOGRAMMA		265	75	10.5	5. to 18.	2.000
OPHIODON ELONGATUS		1	1	25.0	25. to 25.	0.040
PLATICHTHYS STELLATUS		1	1	12.0	12. to 12.	0.005
SEBASTODES Type 1		1	1	19.0	19. to 19.	0.013
BATHYMASTER SIGNATUS		3	3	8.0	6. to 10.	0.007
AGONIDAE (FAMILY)		1	1	10.0	10. to 10.	0.003
AMMODYTES HEXAPTERUS		83	50	28.9	14. to 36.	1.880
THALEICHTHYS PACIFICUS		78	25	16.2	13. to 21.	0.144
LUMPENUS SAGITTA		17	17	35.4	23. to 42.	1.150
SEBASTODES Type 2		6	6	5.7	4. to 7.	0.007
CLUPEA PALLASII	J	1	1	124.0	124. to 124.	17.700
ONCORHYNCHUS NERKA		18	18	81.3	73. to 87.	96.600
ONCORHYNCHUS GORBUSCHA		4	4	34.3	32. to 37.	1.170
ONCORHYNCHUS KETA		9	9	36.3	33. to 43.	3.100
GASTEROSTEUS ACULEATUS		3	3	68.7	68. to 69.	10.200

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	17	Copepod nauplii	9	
		Copepodites	1	1.0
		Copepoda	1	1.3
CLUPEA PALLASII	18	Copepodites	3	0.8
CLUPEA PALLASII	20	Empty		
CLUPEA PALLASII	23	Copepodites	3	0.8
		Copepoda	7	1.4
CLUPEA PALLASII	124	Copepoda	39	1.3
		Calanus plumchrus	80	2.6
		Calanus pacificus	20	2.6
		Calanus plumchrus	14	4.5
		Epilabidocera amphitrites	1	4.4
		Hyperia sp.	3	7.5
		THERAGRA CHALCOGRAMMA	2	12.9
ONCORHYNCHUS GORBUSCHA	32	Copepodites	3	0.8
		Copepoda	19	1.1
		Hyperia sp.	1	1.5
		Copepoda	16	1.9
ONCORHYNCHUS GORBUSCHA	35	Copepoda	3	1.4
		Calliopius sp.	1	1.3
		Copepoda	22	3.4
ONCORHYNCHUS GORBUSCHA	37	Copepodites	3	0.8
		Unknown	1	0.7
		Copepoda	31	1.1
		Hyperia sp.	1	1.2
		Copepoda	4	2.1
		THERAGRA CHALCOGRAMMA	2	5.5
ONCORHYNCHUS KETA	33	Copepodites	1	0.8
		Copepoda	7	1.4
		Copepoda	4	2.4
ONCORHYNCHUS KETA	36	Copepoda	12	1.1

		Calanus plumchrus	23	3.4
		Calanus pacificus	3	3.4
ONCORHYNCHUS KETA	38	Copepoda	26	1.1
		Calanus plumchrus	33	2.1
		Calanus pacificus	9	3.4
ONCORHYNCHUS KETA	43	Copepoda	19	1.3
		Calanus plumchrus	47	2.5
		Calanus pacificus	11	3.0
ONCORHYNCHUS NERKA	73	Copepoda	3	1.4
		Calanus plumchrus	152	1.7
		Calanus pacificus	38	2.6
		Calanus plumchrus	27	4.9
ONCORHYNCHUS NERKA	78	Calanus plumchrus	184	2.4
		Calanus pacificus	46	3.4
		Calanus plumchrus	70	3.9
		THERAGRA CHALCOGRAMMA	1	11.6
ONCORHYNCHUS NERKA	81	Calanus plumchrus	120	2.4
		Calanus pacificus	30	3.4
		Calanus plumchrus	75	3.7
		THERAGRA CHALCOGRAMMA	1	5.2
ONCORHYNCHUS NERKA	83	Copepoda	3	1.2
		Calanus plumchrus	144	1.8
		Calanus pacificus	36	2.4
		Calanus plumchrus	36	4.3
		THERAGRA CHALCOGRAMMA	4	6.2
ONCORHYNCHUS NERKA	84	Copepoda	15	1.3
		Calanus plumchrus	248	3.2
		Calanus pacificus	62	2.8
		Unknown crab	2	3.4
		Calanus plumchrus	110	3.8
		Sagitta elegans	1	21.2
		THALEICHTHYS PACIFICUS	1	20.6
ONCORHYNCHUS NERKA	87	Calanus plumchrus	176	3.4
		Calanus pacificus	44	2.3
		Calanus plumchrus	70	3.6
		CRYPTACANTHODES ALEUTENSIS	1	18.2
THALEICHTHYS PACIFICUS	14	Empty		

THALEICHTHYS PACIFICUS	17	Copepod nauplii	1	
		Copepodites	2	0.7
THALEICHTHYS PACIFICUS	18	Copepod nauplii	1	
		Copepodites	1	0.8
THERAGRA CHALCOGRAMMA	7	Copepod nauplii	20	
THERAGRA CHALCOGRAMMA	9	Pseudocalanus minutus	2	1.2
THERAGRA CHALCOGRAMMA	11	Copepod nauplii	2	
		Copepodites	6	0.6
		Pseudocalanus minutus	4	1.1
THERAGRA CHALCOGRAMMA	13	Copepodites	12	0.8
		Pseudocalanus minutus	4	1.3
THERAGRA CHALCOGRAMMA	15	Copepodites	9	0.7
		Pseudocalanus minutus	12	1.2
THERAGRA CHALCOGRAMMA	17	Copepodites	6	0.7
		Pseudocalanus minutus	18	1.5
LUMPENUS SAGITTA	23	Copepod nauplii	6	
		Copepodites	3	0.7
		Pseudocalanus minutus	1	1.2
LUMPENUS SAGITTA	32	Eggs - 100-160 microns	5	
		Copepodites	8	1.0
		Pseudocalanus minutus	9	1.5
LUMPENUS SAGITTA	35	Empty		
LUMPENUS SAGITTA	40	Copepodites	5	0.6
		Pseudocalanus minutus	7	1.4
		Calanus plumchrus	1	3.0
AMMODYTES HEXAPTERUS	14	Empty		
AMMODYTES HEXAPTERUS	23	Pseudocalanus minutus	3	1.2
AMMODYTES HEXAPTERUS	27	Copepodites	3	0.6
		Pseudocalanus minutus	2	1.2
		Calanus plumchrus	1	2.4
AMMODYTES HEXAPTERUS	31	Copepodites	2	0.9
		Pseudocalanus minutus	10	1.4
		Calanus plumchrus	1	1.9
AMMODYTES HEXAPTERUS	34	Copepodites	2	0.9
		Pseudocalanus minutus	14	1.2
		Calanus plumchrus	4	2.3

Location : 5 MI OFF POINT GREY
Stn. code: 680115

Lat: 49 deg. 18.0 min. N
Long: 123 deg. 21.0 min. W

Date: 4/25/1968

Time set: 0753 Duration: 15. min.

Heading : 250 degrees

Tow number : 15
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		22	22	18.1	15. to 22.	0.152
AMMODYTES HEXAPTERUS	L	45	45	18.1	12. to 22.	0.367
AMMODYTES HEXAPTERUS	PL	29	29	30.1	23. to 39.	1.290
THERAGRA CHALCOGRAMMA		620	0			
LUMPENUS SAGITTA		3	3	41.7	40. to 45.	0.263
STICHAEIDAE (FAMILY)		3	3	29.7	29. to 30.	0.172
RHAMPHOCOTTUS RICHARDSONI		2	2	17.0	17. to 17.	0.164
PSYCHROLUTES SIGALUTES		2	2	18.0	18. to 18.	0.174
BATHYMASTER SIGNATUS		14	14	9.7	6. to 12.	0.037
COTTIDAE (FAMILY)		1	1	7.0	7. to 7.	0.002
CLINOCOTTUS ACUTICEPS		1	1	10.0	10. to 10.	0.005
CRYPTACANTHODES ALEUTENSIS	T1	1	1	28.0	28. to 28.	0.066
CRYPTACANTHODES ALEUTENSIS	T2	5	5	13.0	12. to 14.	0.044
ONCORHYNCHUS GORBUSCHA		9	9	34.4	33. to 36.	2.130
ONCORHYNCHUS KETA		5	5	38.2	34. to 43.	2.190
ONCORHYNCHUS NERKA		22	22	82.4	74. to 91.	124.300
GASTEROSTEUS ACULEATUS		9	9	66.2	53. to 72.	28.000
OPHIODON ELONGATUS		2	2	42.0	35. to 49.	0.768
HEXAGRAMMOS STELLERI		1	1	45.0	45. to 45.	0.678

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	17	Copepod nauplii	9	
		Copepodites	4	1.0
CLUPEA PALLASII	19	Pseudocalanus minutus	1	1.2
CLUPEA PALLASII	22	Pseudocalanus minutus	1	1.2
ONCORHYNCHUS GORBUSCHA	33	Pseudocalanus minutus	2	1.2
		Copepoda	3	2.1
ONCORHYNCHUS GORBUSCHA	34	Pseudocalanus minutus	22	1.2
		Copepoda	7	2.1
ONCORHYNCHUS GORBUSCHA	35	Pseudocalanus minutus	4	1.2
		Calanus plumchrus	8	2.3
		Calanus pacificus	4	1.9
		Calliopius sp.	4	2.3
ONCORHYNCHUS GORBUSCHA	36	Pseudocalanus minutus	1	1.2
		Calanus plumchrus	5	2.5
		Calanus pacificus	1	2.9
ONCORHYNCHUS KETA	34	Calliopius sp.	2	1.1
		Copepoda	3	1.9
		Calliopius sp.	8	3.1
ONCORHYNCHUS KETA	37	Pseudocalanus minutus	12	1.3
		Calanus plumchrus	11	3.5
		Calanus pacificus	3	2.9
ONCORHYNCHUS KETA	42	Pseudocalanus minutus	3	1.4
		Copepoda	3	3.2
		Epilabidocera amphitrites	2	3.8
		Sagitta elegans	2	23.8
ONCORHYNCHUS KETA	43	Copepoda	4	2.3
		Calliopius sp.	1	2.3
		Calanus plumchrus	1	4.4
		Epilabidocera amphitrites	2	4.4
		Sagitta elegans	3	17.3
ONCORHYNCHUS NERKA	74	Limacina helicina	1	0.8

		Pseudocalanus minutus	9	1.3
		Calanus plumchrus	72	2.5
		Calanus pacificus	17	1.7
		Calanus plumchrus	8	4.7
ONCORHYNCHUS NERKA	77	Calanus plumchrus	88	1.9
		Calanus pacificus	22	2.8
		Calliopius sp.	3	2.5
		Hyperia sp.	4	2.8
		Calanus plumchrus	31	3.8
ONCORHYNCHUS NERKA	80	Calanus plumchrus	56	3.1
		Calanus pacificus	14	2.0
		Hyperia sp.	1	1.6
		Calanus plumchrus	60	3.7
ONCORHYNCHUS NERKA	83	Calanus plumchrus	112	3.1
		Calanus pacificus	28	2.1
		Calliopius sp.	6	3.0
		Calanus plumchrus	43	4.6
		Ostracoda - Philomedes sp.	3	1.9
ONCORHYNCHUS NERKA	86	Calanus plumchrus	72	3.2
		Calanus pacificus	16	1.9
		Calanus plumchrus	15	4.3
		Epilabidocera amphitrites	7	4.2
ONCORHYNCHUS NERKA	91	Calanus plumchrus	48	1.7
		Calanus pacificus	12	3.1
		Calliopius sp.	2	2.0
		Hyperia sp.	1	2.3
		Calanus plumchrus	12	4.2
		Sagitta elegans	6	22.8
THERAGRA CHALCOGRAMMA	5	Copepod nauplii	3	
THERAGRA CHALCOGRAMMA	7	Copepod nauplii	10	
		Copepodites	1	0.8
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	4	
		Copepodites	7	0.7
		Pseudocalanus minutus	1	1.3
THERAGRA CHALCOGRAMMA	12	Eggs - 100-160 microns	9	
		Copepodites	3	0.8
		Pseudocalanus minutus	2	1.1

THERAGRA CHALCOGRAMMA	15	Copepodites	3	1.0
		Pseudocalanus minutus	16	1.4
THERAGRA CHALCOGRAMMA	18	Copepodites	2	0.6
		Pseudocalanus minutus	15	1.2
		Copepoda	2	3.1
THERAGRA CHALCOGRAMMA	21	Pseudocalanus minutus	4	1.2
		Copepoda	4	3.2
AMMODYTES HEXAPTERUS	12	Copepod nauplii	9	
AMMODYTES HEXAPTERUS	17	Copepodites	5	0.8
AMMODYTES HEXAPTERUS	19	Copepod nauplii	3	
		Copepodites	3	0.9
AMMODYTES HEXAPTERUS	21	Eggs - 100-160 microns	3	
		Copepodites	16	0.8
		Pseudocalanus minutus	2	1.3
AMMODYTES HEXAPTERUS	24	Copepod nauplii	7	
		Copepodites	14	0.9
AMMODYTES HEXAPTERUS	29	Copepodites	16	0.8
		Pseudocalanus minutus	3	1.3
AMMODYTES HEXAPTERUS	32	Copepodites	38	0.6
		Pseudocalanus minutus	9	1.2
AMMODYTES HEXAPTERUS	37	Copepodites	62	0.7
		Pseudocalanus minutus	2	1.3
HEXAGRAMMOS STELLERI	45	Pseudocalanus minutus	30	1.4
		Calanus plumchrus	13	2.7
		Calanus pacificus	3	3.4
		THERAGRA CHALCOGRAMMA	2	9.6
OPHIODON ELONGATUS	35	Calanus plumchrus	15	2.0
		Calanus pacificus	3	1.8
OPHIODON ELONGATUS	48	Pseudocalanus minutus	3	1.4
		Calanus plumchrus	7	1.8
		Calanus pacificus	2	2.3

Location : OFF POINT GREY
Stn. code: 680116

Lat: 49 deg. 16.0 min. N
Long: 123 deg. 18.0 min. W

Date: 4/25/1968

Time set: 0849 Duration: 15. min.

Heading : 155 degrees

Tow number : 16
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		83	83	18.5	14. to 26.	0.650
AMMODYTES HEXAPTERUS		155	155	28.0	9. to 44.	7.130
LUMPENUS SAGITTA		35	35	37.9	23. to 45.	3.000
GASTEROSTEUS ACULEATUS		18	18	69.2	65. to 74.	63.600
ONCORHYNCHUS TSHAWYTSCHA		1	1	148.0	148. to 148.	39.700
PSYCHROLUTES SIGALUTES		2	2	24.0	21. to 27.	0.935
ONCORHYNCHUS NERKA		68	68	81.5	70. to 114.	355.000
HEXAGRAMMOS STELLERI		23	23	47.3	41. to 57.	19.300
ONCORHYNCHUS GORBUSCHA	T1	48	48	33.6	32. to 36.	11.400
ONCORHYNCHUS GORBUSCHA	T2	4	4	51.3	45. to 65.	4.890
ONCORHYNCHUS KETA	T1	18	18	37.5	35. to 40.	7.000
ONCORHYNCHUS KETA	T2	8	8	47.8	43. to 55.	7.510
THERAGRA CHALCOGRAMMA		167	84	8.6	4. to 22.	0.325
THALEICHTHYS PACIFICUS		2	2	19.0	18. to 20.	0.023
BATHYMASTER SIGNATUS		3	3	7.7	7. to 8.	0.005
AGONIDAE (FAMILY)		1	1	14.0	14. to 14.	0.008
SEBASTODES Type 2		1	1	5.0	5. to 5.	0.005
COTTIDAE (FAMILY)		1	1	10.0	10. to 10.	0.008
CRYPTACANTHODES ALEUTENSIS		4	4	21.8	14. to 30.	0.184
SEBASTODES Type 1		4	4	22.5	18. to 27.	0.081
STICHAEIDAE (FAMILY)		5	5	25.6	16. to 34.	0.350

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	33	Pseudocalanus minutus	4	1.2
		Copepodites	6	1.2
		Copepoda	4	3.0
ONCORHYNCHUS GORBUSCHA	33	Pseudocalanus minutus	4	1.3
		Copepodites	6	1.3
		Copepoda	7	2.2
ONCORHYNCHUS GORBUSCHA	35	Copepoda	3	1.8
ONCORHYNCHUS GORBUSCHA	36	Pseudocalanus minutus	8	1.4
		Copepodites	12	1.4
		Copepoda	14	2.5
ONCORHYNCHUS GORBUSCHA	45	Copepoda	24	3.0
		Calliopius sp.	1	2.6
		Calanus plumchrus	3	4.5
		Epilabidocera amphitrites	2	3.9
ONCORHYNCHUS GORBUSCHA	48	Pseudocalanus minutus	4	1.5
		Copepodites	7	1.4
		Copepoda	47	2.6
		Calanus plumchrus	8	4.3
ONCORHYNCHUS GORBUSCHA	65	Copepoda	33	1.7
		Hyperia sp.	1	1.7
		Calanus plumchrus	4	4.3
		Epilabidocera amphitrites	4	4.7
		Euphausia pacifica	2	14.8
		THERAGRA CHALCOGRAMMA	2	9.0
ONCORHYNCHUS KETA	36	Copepodites	2	0.7
		Pseudocalanus minutus	1	1.1
		Copepodites	2	1.3
		Copepoda	10	2.0
		Calanus plumchrus	1	3.7
ONCORHYNCHUS KETA	38	Pseudocalanus minutus	1	1.2
		Copepodites	3	1.2

		Copepoda	13	3.0
		Diptera	1	2.6
ONCORHYNCHUS NERKA	70	Pseudocalanus minutus	11	1.1
		Calanus plumchrus	80	3.1
		Calanus pacificus	15	2.8
		Calanus plumchrus	3	3.8
ONCORHYNCHUS NERKA	75	Calanus plumchrus	41	1.9
		Calanus pacificus	11	3.1
		Calanus plumchrus	11	4.5
		Epilabidocera amphitrites	4	4.9
		THERAGRA CHALCOGRAMMA	2	11.9
		CRYPTACANTHODES ALEUTENSI:	2	14.4
		THERAGRA CHALCOGRAMMA	1	21.9
		CRYPTACANTHODES ALEUTENSI:	1	19.0
ONCORHYNCHUS NERKA	77	Calanus plumchrus	160	2.6
		Calanus pacificus	40	2.4
		Calanus plumchrus	54	4.6
		Epilabidocera amphitrites	4	4.6
		Diptera - Culicidae (larv[illegible]e)	1	7.8
		Sagitta elegans	1	19.2
ONCORHYNCHUS NERKA	80	Calanus plumchrus	288	3.4
		Calanus pacificus	72	1.8
		Calanus plumchrus	31	3.8
		Hyperia sp.	2	2.3
		Epilabidocera amphitrites	3	3.9
		Hyperia sp.	3	4.3
		Hyperia sp.	1	5.6
ONCORHYNCHUS NERKA	82	Calanus plumchrus	280	3.3
		Calanus pacificus	70	1.9
		Calanus plumchrus	86	3.9
		Epilabidocera amphitrites	1	4.1
ONCORHYNCHUS NERKA	84	Calanus plumchrus	136	3.3
		Calanus pacificus	34	3.1
		Calanus plumchrus	53	4.7
		Epilabidocera amphitrites	8	3.8
		Euphausia pacifica	1	13.7
ONCORHYNCHUS NERKA	87	Calanus plumchrus	184	3.0

		Calanus pacificus	46	2.7
		Calanus plumchrus	40	4.0
ONCORHYNCHUS NERKA	90	Calanus plumchrus	76	1.8
		Calanus pacificus	19	3.3
		Calanus plumchrus	30	3.7
		Epilabidocera amphitrites	1	4.9
ONCORHYNCHUS NERKA	114	Calanus plumchrus	132	2.6
		Calanus pacificus	33	2.9
		Calanus plumchrus	18	4.2
		Hyperia sp.	1	6.4
		THERAGRA CHALCOGRAMMA	9	12.8
		CRYPTACANTHODES ALEUTENSIS	2	12.9
		CRYPTACANTHODES ALEUTENSIS	1	19.2
ONCORHYNCHUS TSHAWYTSCHA	148	THERAGRA CHALCOGRAMMA	6	15.0
		AMMODYTES HEXAPTERUS	2	27.9
THERAGRA CHALCOGRAMMA	6	Copepod nauplii	6	
		Copepodites	1	0.9
THERAGRA CHALCOGRAMMA	7	Copepod nauplii	8	
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	3	
		Copepodites	3	1.0
		Pseudocalanus minutus	1	1.2
THERAGRA CHALCOGRAMMA	11	Copepod nauplii	1	
		Copepodites	5	1.0
		Pseudocalanus minutus	2	1.2
THERAGRA CHALCOGRAMMA	14	Copepodites	6	0.7
		Pseudocalanus minutus	6	1.1
THERAGRA CHALCOGRAMMA	22	Pseudocalanus minutus	4	1.3
		Calanus plumchrus	2	3.2
LUMPENUS SAGITTA	33	Eggs - 100-160 microns	5	
		Copepod nauplii	1	
		Copepodites	11	1.2
		Pseudocalanus minutus	4	1.4
LUMPENUS SAGITTA	38	Empty		
LUMPENUS SAGITTA	43	Copepodites	3	0.9
		Pseudocalanus minutus	2	1.3
		Calanus plumchrus	1	3.2
AMMODYTES HEXAPTERUS	16	Copepod nauplii	24	

		Copepodites	2	0.7
AMMODYTES HEXAPTERUS	23	Copepod nauplii	8	
AMMODYTES HEXAPTERUS	29	Copepodites	3	0.8
		Pseudocalanus minutus	13	1.5
AMMODYTES HEXAPTERUS	35	Eggs - 100-160 microns	6	
		Copepodites	45	0.8
		Pseudocalanus minutus	18	1.4
AMMODYTES HEXAPTERUS	41	Copepodites	7	0.8
		Pseudocalanus minutus	7	1.4
		Calanus plumchrus	8	2.0
HEXAGRAMMOS STELLERI	42	Pseudocalanus minutus	7	1.3
		Calanus plumchrus	4	1.7
		Calanus pacificus	1	1.9
		Calanus plumchrus	1	3.6
HEXAGRAMMOS STELLERI	48	Pseudocalanus minutus	8	1.3
		Calanus plumchrus	16	3.3
		Calanus pacificus	4	2.5
		Calanus plumchrus	2	4.3
HEXAGRAMMOS STELLERI	52	Pseudocalanus minutus	12	1.3
		Calanus plumchrus	28	2.2
		Calanus pacificus	7	3.1
		Calanus plumchrus	2	4.0
HEXAGRAMMOS STELLERI	57	Pseudocalanus minutus	5	1.4
		Calanus plumchrus	24	3.3
		Calanus pacificus	6	2.0
		Calanus plumchrus	3	3.8

Location : OFF NORTH ARM FRASER
Stn. code: 680117

Lat: 49 deg. 12.0 min. N
Long: 123 deg. 18.5 min. W

Date: 4/25/1968

Time set: 0942 Duration: 15. min.

Heading : 170 degrees

Tow number : 17
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	12	12	200.2	167. to 222.	1100.000
CLUPEA PALLASII	J	96	32	18.1	12. to 24.	0.228
THALEICHTHYS PACIFICUS		2	2	15.5	15. to 16.	0.018
RHAMPHOCOTTUS RICHARDSONI		1	1	16.0	16. to 16.	0.072
COTTIDAE (FAMILY)		2	2	10.5	10. to 11.	0.019
LEUROGLOSSUS SCHMIDTI		9	3	13.0	12. to 14.	0.012
THERAGRA CHALCOGRAMMA		195	65	8.0	4. to 16.	0.220
SEBASTODES Type 1		1	1	20.0	20. to 20.	0.022
CRYPTACANTHODES ALEUTENSIS		2	2	17.0	16. to 18.	0.026
STICHAEIDAE (FAMILY)		4	2	13.5	13. to 14.	0.007
AMMODYTES HEXAPTERUS	L	171	57	26.3	8. to 42.	2.050
AMMODYTES HEXAPTERUS	PL	5	5	36.4	31. to 43.	0.502
LUMPENUS SAGITTA	T1	21	7	37.1	30. to 42.	0.505
LUMPENUS SAGITTA	T2	5	5	41.6	38. to 46.	0.585
SEBASTODES Type 2		102	34	5.2	4. to 7.	0.023
MYOXOCEPHALUS POLYACANTHOCEPHALUS		1	1	16.0	16. to 16.	0.052
COTTIDAE (FAMILY)		2	2	10.0	9. to 11.	0.013
PSYCHROLUTES SIGALUTES		1	1	21.0	21. to 21.	0.270
PLEURONECTIDAE (FAMILY)		2	2	8.5	5. to 12.	0.005
ONCORHYNCHUS GORBUSCHA		23	23	33.9	31. to 37.	5.460
ONCORHYNCHUS KETA		9	9	37.3	36. to 39.	3.450
ONCORHYNCHUS NERKA		5	5	81.0	73. to 86.	27.250
GASTEROSTEUS ACULEATUS		10	10	64.3	41. to 70.	30.800

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	12	Copepod nauplii	2	
CLUPEA PALLASII	16	Copepod nauplii	1	
		Copepodites	2	0.7
CLUPEA PALLASII	17	Copepod nauplii	1	
		Copepodites	2	0.9
CLUPEA PALLASII	18	Copepod nauplii	1	
		Copepodites	3	0.8
CLUPEA PALLASII	23	Copepodites	10	0.7
		Pseudocalanus minutus	2	1.3
CLUPEA PALLASII	24	Copepodites	6	1.0
		Pseudocalanus minutus	4	1.4
CLUPEA PALLASII	167	Calanus plumchrus	10	4.9
		Hyperia sp.	8	7.9
		Euphausia pacifica	28	11.4
		THERAGRA CHALCOGRAMMA	28	12.0
		CLUPEA PALLASII	1	16.4
CLUPEA PALLASII	195	Calanus plumchrus	280	1.9
		Calanus pacificus	70	3.1
		Calanus plumchrus	50	4.0
		Hyperia sp.	6	6.1
		THERAGRA CHALCOGRAMMA	2	8.9
		CRYPTACANTHODES ALEUTENSIS	4	23.6
CLUPEA PALLASII	200	Calanus plumchrus	16	2.0
		Calanus pacificus	4	1.6
		Euphausia pacifica	2	10.0
CLUPEA PALLASII	205	Calanus plumchrus	12	3.1
		Calanus pacificus	3	3.4
		Calanus plumchrus	15	3.8
		Hyperia sp.	18	7.1
		THERAGRA CHALCOGRAMMA	40	7.8
		Euphausia pacifica	2	12.0

		THERAGRA CHALCOGRAMMA	30	9.9
CLUPEA PALLASII	213	Calanus plumchrus	10	3.4
		Calanus pacificus	2	2.7
		Hyperia sp.	11	7.1
		Calanus plumchrus	7	3.7
		THERAGRA CHALCOGRAMMA	18	6.5
		Euphausia pacifica	1	9.9
		THERAGRA CHALCOGRAMMA	32	10.5
ONCORHYNCHUS GORBUSCHA	31	Copepodites	5	0.8
		Calanus sp.	2	2.9
ONCORHYNCHUS GORBUSCHA	32	Calanus sp.	2	2.3
		Cyphocaris challengeri	1	2.8
ONCORHYNCHUS GORBUSCHA	33	Calanus sp.	1	2.9
ONCORHYNCHUS GORBUSCHA	33	Calanus sp.	6	3.0
ONCORHYNCHUS GORBUSCHA	34	Calanus sp.	15	1.6
		Diptera	1	2.5
ONCORHYNCHUS GORBUSCHA	34	Empty		
ONCORHYNCHUS GORBUSCHA	36	Calanus sp.	8	2.3
		Epilabidocera amphitrites	2	3.2
ONCORHYNCHUS GORBUSCHA	37	Calanus sp.	22	2.0
ONCORHYNCHUS KETA	37	Calliopius sp.	2	1.5
		Calanus sp.	1	2.4
		Diptera	1	2.6
ONCORHYNCHUS KETA	37	Copepodites	1	0.7
		Pseudocalanus minutus	9	1.2
		Calanus sp.	5	1.7
		Calliopius sp.	2	2.7
		Diptera	4	2.9
ONCORHYNCHUS KETA	37	Calanus sp.	2	1.7
ONCORHYNCHUS KETA	38	Calanus sp.	13	3.5
		Brachyura zoea stage	1	2.3
		Hemiptera	1	2.8
		CRYPTACANTHODES ALEUTENSIS	1	23.8
ONCORHYNCHUS KETA	39	Calanus sp.	22	2.4
		THERAGRA CHALCOGRAMMA	2	4.2
		THERAGRA CHALCOGRAMMA	4	6.1
		SEBASTODES Type 2	1	7.3

ONCORHYNCHUS NERKA	73	STICHAEIDAE (FAMILY)	2	12.8
		CRYPTACANTHODES ALEUTENSIS	4	16.5
ONCORHYNCHUS NERKA	73	Calanus sp.	75	2.3
		Hyperia sp.	1	2.6
		Calanus plumchrus	2	4.3
		Epilabidocera amphitrites	1	4.8
		THERAGRA CHALCOGRAMMA	1	5.2
		Euphausia pacifica	1	12.4
		Sagitta elegans	4	9.5
ONCORHYNCHUS NERKA	78	Calanus sp.	20	3.3
		Euphausia pacifica	2	11.7
		THERAGRA CHALCOGRAMMA	2	12.5
		CRYPTACANTHODES ALEUTENSIS	2	20.2
ONCORHYNCHUS NERKA	84	Pseudocalanus minutus	5	2.7
		Calanus sp.	200	2.7
		Hyperia sp.	2	1.9
		Brachyura zoea stage	3	2.2
		Calanus plumchrus	5	4.5
		Euphausia pacifica	1	13.3
ONCORHYNCHUS NERKA	84	Pseudocalanus minutus	5	1.8
		Calanus sp.	280	2.4
		Calanus plumchrus	2	4.0
		Euphausia pacifica	1	10.6
		CRYPTACANTHODES ALEUTENSIS	1	23.4
ONCORHYNCHUS NERKA	86	Calanus sp.	130	3.5
		Epilabidocera amphitrites	1	4.6
		Euphausia pacifica	3	9.9
		Sagitta elegans	4	10.3
THERAGRA CHALCOGRAMMA	4	Empty		
THERAGRA CHALCOGRAMMA	6	Copepod nauplii	7	
THERAGRA CHALCOGRAMMA	7	Copepod nauplii	3	
THERAGRA CHALCOGRAMMA	8	Copepod nauplii	10	
THERAGRA CHALCOGRAMMA	10	Copepod nauplii	12	
		Pseudocalanus minutus	1	1.3
THERAGRA CHALCOGRAMMA	12	Pseudocalanus minutus	1	1.4
THERAGRA CHALCOGRAMMA	15	Copepodites	1	0.8
		Pseudocalanus minutus	10	1.2

GASTEROSTEUS ACULEATUS	41	Copepodites	1	0.8
		Pseudocalanus minutus	9	1.5
		Calanus sp.	12	1.8
		Cyphocaris challengeri	1	1.7
		Cumacea	1	4.8
GASTEROSTEUS ACULEATUS	60	Copepodites	3	0.8
		Pseudocalanus minutus	23	1.2
		Calanus sp.	30	1.6
		Caprellidae	7	3.4
		Epilabidocera amphitrites	1	3.9
		THERAGRA CHALCOGRAMMA	1	7.1
GASTEROSTEUS ACULEATUS	65	Calanus sp.	18	3.0
		THERAGRA CHALCOGRAMMA	1	5.5
GASTEROSTEUS ACULEATUS	68	Pseudocalanus minutus	15	1.3
		Calanus sp.	70	2.5
		Epilabidocera amphitrites	2	4.5
GASTEROSTEUS ACULEATUS	70	Epilabidocera amphitrites	1	4.7
AMMODYTES HEXAPTERUS	9	Copepod nauplii	3	
AMMODYTES HEXAPTERUS	16	Copepod nauplii	11	
AMMODYTES HEXAPTERUS	21	Copepod nauplii	2	
		Copepodites	3	0.7
		Calanus sp.	1	1.3
AMMODYTES HEXAPTERUS	27	Copepodites	8	0.9
		Pseudocalanus minutus	1	1.1
AMMODYTES HEXAPTERUS	33	Copepodites	4	1.0
		Pseudocalanus minutus	9	1.2
AMMODYTES HEXAPTERUS	42	Copepodites	3	0.8
		Pseudocalanus minutus	15	1.3
		Calanus sp.	4	1.3

Location : MID STRAIT OFF SANDHEADS
Stn. code: 680118

Lat: 49 deg. 5.0 min. N
Long: 123 deg. 27.0 min. W

Date: 4/25/1968

Time set: 1100 Duration: 15. min.

Heading : 195 degrees

Tow number : 18
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		11	11	17.8	14. to 24.	0.080
LUMPENUS SAGITTA		4	4	30.3	18. to 37.	0.172
STICHAEIDAE (FAMILY)		1	1	28.0	28. to 28.	0.045
CRYPTACANTHODES ALEUTENSIS		13	13	15.0	13. to 17.	0.166
SEBASTODES Type 2		9	9	5.1	4. to 8.	0.008
LEUROGLOSSUS SCHMIDTI		1	1	12.0	12. to 12.	0.004
MERLUCCIUS PRODUCTUS		1	1	5.0	5. to 5.	0.001
COTTIDAE (FAMILY)		1	1	6.0	6. to 6.	0.001
THERAGRA CHALCOGRAMMA	T1	1	1	23.0	23. to 23.	0.051
THERAGRA CHALCOGRAMMA	T2	27	27	8.6	5. to 16.	0.090
AMMODYTES HEXAPTERUS		29	29	25.7	14. to 40.	0.910
ONCORHYNCHUS GORBUSCHA		19	19	33.9	32. to 38.	4.450
ONCORHYNCHUS KETA		5	5	39.0	35. to 45.	2.430
HEXAGRAMMOS STELLERI		1	1	46.0	46. to 46.	0.725
GASTEROSTEUS ACULEATUS		3	3	65.0	61. to 67.	8.600

STOMACH CONTENTS Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	32	Copepodites	24	1.0
		Pseudocalanus minutus	21	1.2
		Calanus plumchrus	1	3.4
ONCORHYNCHUS GORBUSCHA	33	Copepodites	3	1.0
		Pseudocalanus minutus	14	1.4
		Calanus plumchrus	4	2.7
ONCORHYNCHUS GORBUSCHA	34	Copepodites	2	1.0
		Pseudocalanus minutus	6	1.2
		Calanus plumchrus	11	2.2
ONCORHYNCHUS GORBUSCHA	35	Pseudocalanus minutus	10	1.4
		Calanus plumchrus	4	2.3
		Diptera	1	3.2
ONCORHYNCHUS GORBUSCHA	38	Pseudocalanus minutus	28	1.5
		Acartia longiremis	20	1.2
		Calanus plumchrus	12	3.2
		Calliopius sp.	10	3.4
ONCORHYNCHUS KETA	35	Calanus plumchrus	5	4.3
		THERAGRA CHALCOGRAMMA	2	6.2
		THERAGRA CHALCOGRAMMA	1	13.5
ONCORHYNCHUS KETA	35	Acartia longiremis	2	1.5
		Calanus plumchrus	4	3.0
ONCORHYNCHUS KETA	38	Acartia longiremis	5	1.4
		Calanus plumchrus	2	2.7
		Calliopius sp.	5	1.7
ONCORHYNCHUS KETA	42	Acartia longiremis	1	1.4
		Calliopius sp.	40	1.1
		Calanus plumchrus	4	2.7
		Calliopius sp.	11	3.3
ONCORHYNCHUS KETA	45	Acartia longiremis	30	1.2
		Calliopius sp.	2	1.2
		Calanus plumchrus	7	3.0
		Epilabidocera amphitrites	1	1.9

Location : 3 MI OFF PORLIER PASS
Stn. code: 680119

Lat: 49 deg. 3.0 min. N
Long: 123 deg. 33.0 min. W

Date: 4/25/1968

Time set: 1150 Duration: 15. min.

Heading : 195 degrees

Tow number : 19
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3	3	18.7	17. to 20.	0.018
AMMODYTES HEXAPTERUS		6	6	29.8	26. to 37.	0.230
CRYPTACANTHODES ALEUTENSIS		9	9	13.2	12. to 14.	0.055
LUMPENUS SAGITTA		1	1	33.0	33. to 33.	0.045
COTTIDAE (FAMILY)		1	1	11.0	11. to 11.	0.016
SEBASTODES Type 2		43	43	5.7	4. to 8.	0.039
THERAGRA CHALCOGRAMMA		68	68	12.9	4. to 20.	0.930
ONCORHYNCHUS GORBUSCHA		5	5	34.2	33. to 36.	1.170

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	33	Pseudocalanus minutus	4	1.5
		Acartia longiremis	1	1.1
		Calanus plumchrus	1	1.7
ONCORHYNCHUS GORBUSCHA	33	Copepodites	1	0.6
		Acartia longiremis	1	1.3
		Calanus plumchrus	1	2.9
		Sagitta elegans	3	4.5

		Sagitta elegans	2	7.3
ONCORHYNCHUS GORBUSCHA	34	Copepodites	10	0.9
		Pseudocalanus minutus	35	1.2
		Acartia longiremis	5	1.4
		Calanus plumchrus	1	2.7
ONCORHYNCHUS GORBUSCHA	35	Copepodites	16	0.8
		Pseudocalanus minutus	22	1.5
		Acartia longiremis	4	1.2
		Calanus plumchrus	1	3.0
ONCORHYNCHUS GORBUSCHA	36	Calanus plumchrus	4	2.2
THERAGRA CHALCOGRAMMA	4	Copepod nauplii	2	
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	37	
		Copepodites	1	
		Copepodites	1	0.6
THERAGRA CHALCOGRAMMA	11	Copepod nauplii	1	
		Copepodites	3	
		Copepodites	4	0.7
		Pseudocalanus minutus	1	1.2
THERAGRA CHALCOGRAMMA	13	Copepodites	7	0.6
		Pseudocalanus minutus	5	1.4
THERAGRA CHALCOGRAMMA	15	Copepodites	2	
		Copepodites	15	0.7
		Pseudocalanus minutus	8	1.4
THERAGRA CHALCOGRAMMA	17	Copepodites	2	0.6
		Pseudocalanus minutus	3	1.3
		Calanus plumchrus	1	2.2
THERAGRA CHALCOGRAMMA	18	Copepodites	7	1.0
		Pseudocalanus minutus	9	1.4
		Calanus plumchrus	3	2.6
THERAGRA CHALCOGRAMMA	19	Pseudocalanus minutus	2	1.4
		Calanus plumchrus	6	1.7
THERAGRA CHALCOGRAMMA	20	Copepodites	2	0.6
		Pseudocalanus minutus	4	1.4
		Calanus plumchrus	5	3.3
SEBASTODES Type 2	5	Copepod nauplii	6	
SEBASTODES Type 2	5	Copepod nauplii	11	
SEBASTODES Type 2	6	Copepod nauplii	9	

SEBASTODES Type 2	6	Copepod nauplii	19
		Copepodites	1
SEBASTODES Type 2	7	Copepod nauplii	24

Location : OFF PORLIER PASS
Stn. code: 680120

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 35.0 min. W

Date: 4/25/1968

Time set: 1250 Duration: 15. min.

Heading : 170 degrees

Tow number : 20
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		6	6	18.3	12. to 22.	0.050
BATHYMASTER SIGNATUS		9	9	7.9	5. to 9.	0.013
THALEICHTHYS PACIFICUS		1	1	17.0	17. to 17.	0.006
MERLUCCIUS PRODUCTUS		3	3	4.3	4. to 5.	0.001
COTTIDAE (FAMILY)		2	2	5.5	5. to 6.	0.002
LEUROGLOSSUS SCHMIDTI	T1	3	3	3.0	1. to 4.	0.003
LEUROGLOSSUS SCHMIDTI	T2	1	1	12.0	12. to 12.	0.001
LEUROGLOSSUS SCHMIDTI	T3	1	1	16.0	16. to 16.	0.006
SEBASTODES Type 2		86	86	4.9	4. to 7.	0.037
CRYPTACANTHODES ALEUTENSIS		9	9	17.4	13. to 23.	0.122
LUMPENUS SAGITTA		2	2	35.5	35. to 36.	0.110
STICHAEIDAE (FAMILY)		5	5	17.0	14. to 18.	0.052
BATHYMASTERIDAE (FAMILY)		1	1	19.0	19. to 19.	0.019
THERAGRA CHALCOGRAMMA		118	118	13.0	6. to 22.	1.570
AMMODYTES HEXAPTERUS		25	25	28.8	15. to 40.	0.940

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	12	Empty		
CLUPEA PALLASII	20	Copepodites	1	0.7
CLUPEA PALLASII	22	Empty		
THERAGRA CHALCOGRAMMA	6	Copepod nauplii	6	
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	26	
		Copepodites	3	
		Oithona sp.	1	0.6
THERAGRA CHALCOGRAMMA	11	Copepodites	2	
		Copepodites	2	0.7
		Pseudocalanus minutus	1	1.4
THERAGRA CHALCOGRAMMA	12	Copepodites	1	1.0
		Pseudocalanus minutus	5	1.4
THERAGRA CHALCOGRAMMA	12	Copepodites	3	0.9
		Pseudocalanus minutus	2	1.4
THERAGRA CHALCOGRAMMA	12	Copepod nauplii	1	
		Copepodites	2	
		Copepodites	7	0.8
THERAGRA CHALCOGRAMMA	12	Copepod nauplii	4	
		Copepodites	9	
		Copepodites	11	0.9
		Oithona sp.	2	0.9
		Pseudocalanus minutus	3	1.4
THERAGRA CHALCOGRAMMA	12	Copepod nauplii	5	
		Copepodites	2	
		Copepodites	5	0.9
		Oncaea borealis	1	0.9
		Pseudocalanus minutus	1	1.1
THERAGRA CHALCOGRAMMA	12	Copepod nauplii	5	
		Copepodites	4	0.9
		Pseudocalanus minutus	2	1.2
THERAGRA CHALCOGRAMMA	12	Eggs - 100-160 microns	14	

		Copepodites	2	0.7
		Pseudocalanus minutus	5	1.2
THERAGRA CHALCOGRAMMA	12	Eggs - 100-160 microns	17	
		Copepodites	1	0.8
		Microcalanus pusillus	1	0.8
		Pseudocalanus minutus	5	1.2
THERAGRA CHALCOGRAMMA	12	Eggs - 100-160 microns	17	
		Copepodites	2	0.7
		Pseudocalanus minutus	3	1.2
THERAGRA CHALCOGRAMMA	12	Eggs - 100-160 microns	35	
		Copepodites	1	0.6
		Pseudocalanus minutus	5	1.4
THERAGRA CHALCOGRAMMA	14	Copepodites	6	0.9
		Pseudocalanus minutus	2	1.2
THERAGRA CHALCOGRAMMA	15	Copepodites	4	0.8
		Pseudocalanus minutus	5	1.2
		Calanus plumchrus	1	2.2
THERAGRA CHALCOGRAMMA	16	Eggs - 100-160 microns	16	
		Copepodites	2	0.9
		Pseudocalanus minutus	7	1.3
THERAGRA CHALCOGRAMMA	18	Copepodites	3	0.7
		Pseudocalanus minutus	3	1.2
		Calanus plumchrus	4	2.7
THERAGRA CHALCOGRAMMA	22	Pseudocalanus minutus	8	1.2
		Calanus plumchrus	7	3.1
AMMODYTES HEXAPTERUS	16	Eggs - 100-160 microns	1	
		Copepod nauplii	7	
		Copepodites	1	0.8
AMMODYTES HEXAPTERUS	25	Copepodites	10	1.0
		Pseudocalanus minutus	2	1.5
AMMODYTES HEXAPTERUS	30	Eggs - 100-160 microns	60	
		Copepodites	3	0.9
		Pseudocalanus minutus	9	1.3
		Calanus plumchrus	1	3.3
AMMODYTES HEXAPTERUS	35	Eggs - 100-160 microns	57	
		Copepodites	2	1.0
		Pseudocalanus minutus	22	1.4

AMMODYTES HEXAPTERUS	40	Eggs - 100-160 microns	46	
		Copepodites	9	0.8
		Pseudocalanus minutus	15	1.1
		Calanus plumchrus	1	1.6
SEBASTODES Type 2	5	Copepod nauplii	1	
SEBASTODES Type 2	5	Copepod nauplii	2	
SEBASTODES Type 2	6	Copepod nauplii	2	
SEBASTODES Type 2	7	Copepod nauplii	8	

Location : OFF PORLIER PASS
Stn. code: 680121

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 32.0 min. W

Date: 4/25/1968

Time set: 1330 Duration: 15. min.

Heading : 120 degrees

Tow number : 21
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CRYPTACANTHODES ALEUTENSIS		3	1	15.0	15. to 15.	0.007
AMMODYTES HEXAPTERUS		3	1	30.0	30. to 30.	0.038
SEBASTODES Type 2		39	13	4.8	4. to 7.	0.006
THERAGRA CHALCOGRAMMA		87	29	12.8	7. to 19.	0.308
ONCORHYNCHUS GORBUSCHA		3	3	34.7	31. to 37.	0.900
ONCORHYNCHUS KETA		4	4	39.5	38. to 41.	2.090
HEXAGRAMMOS STELLERI		1	1	42.0	42. to 42.	0.540
GASTEROSTEUS ACULEATUS		1	1	75.0	75. to 75.	4.300

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	31	Copepodites	1	0.7
		Pseudocalanus minutus	17	1.2
		Calanus plumchrus	3	2.9
ONCORHYNCHUS GORBUSCHA	36	Pseudocalanus minutus	11	1.3
		Calanus plumchrus	3	2.9
ONCORHYNCHUS GORBUSCHA	37	Pseudocalanus minutus	5	1.2
		Calanus plumchrus	9	3.1

ONCORHYNCHUS KETA	38	Pseudocalanus minutus	3	1.3
		Copepod - unknown	5	1.1
		Hemiptera	4	1.4
		Calanus plumchrus	9	2.3
		Cyphocaris challengeri	2	2.1
		Diptera	7	1.8
		Diptera - Culicidae (larvae)	1	2.9
ONCORHYNCHUS KETA	39	Pseudocalanus minutus	2	1.2
		Copepod - unknown	6	1.3
		Hemiptera	3	1.3
		Calanus plumchrus	11	3.2
		Cyphocaris challengeri	4	2.2
		Diptera	6	1.8
ONCORHYNCHUS KETA	40	Pseudocalanus minutus	30	1.4
		Copepod - unknown	10	1.4
		Calanus plumchrus	2	1.9
		Cyphocaris challengeri	1	3.2
		Diptera	5	1.7
		Diptera - Culicidae (larvae)	3	3.4
ONCORHYNCHUS KETA	41	Copepod - unknown	5	1.5
		Hemiptera	1	1.1
		Calanus plumchrus	10	2.1
		Diptera	1	2.6
GASTEROSTEUS ACULEATUS	75	Calanus plumchrus	13	3.1
		Diptera	2	2.7
		Calanus plumchrus	16	4.7
		Epilabidocera amphitrites	1	4.8
		Thysanoessa raschii	1	9.4
HEXAGRAMMOS STELLERI	42	Calanus plumchrus	5	3.4
		Calanus plumchrus	1	4.5

Location : OFF MID GALIANO IS
Stn. code: 680122

Lat: 48 deg. 57.5 min. N
Long: 123 deg. 27.0 min. W

Date: 4/25/1968

Time set: 1435 Duration: 15. min.

Heading : 100 degrees

Tow number : 22
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CRYPTACANTHODES ALEUTENSIS		1	1	14.0	14. to 14.	0.009
AMMODYTES HEXAPTERUS		4	4	27.0	19. to 32.	0.120
SEBASTODES Type 2		6	6	5.2	5. to 6.	0.005
ONCORHYNCHUS GORBUSCHA		2	2	34.5	34. to 35.	0.542
THERAGRA CHALCOGRAMMA		38	38	13.9	10. to 20.	0.556
GASTEROSTEUS ACULEATUS		70	70	68.1	62. to 79.	241.000

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	34	Copepodites	5	0.7
		Pseudocalanus minutus	71	1.3
		Calanus plumchrus	15	2.9
ONCORHYNCHUS GORBUSCHA	35	Copepodites	3	
		Conchoecia pseudohamata	1	0.8
		Copepodites	24	1.0
		Pseudocalanus minutus	130	1.4
		Copepod - unknown	1	1.3
		Calanus plumchrus	3	3.2

Location : OFF SALAMANCA PT.
Stn. code: 680123

Lat: 48 deg. 55.0 min. N
Long: 123 deg. 20.0 min. W

Date: 4/25/1968

Time set: 1534 Duration: 15. min.

Heading : 100 degrees

Tow number : 23
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
BATHYMASTER SIGNATUS		1	1	10.0	10. to 10.	0.002
COTTIDAE (FAMILY)		1	1	4.0	4. to 4.	0.001
SEBASTODES Type 2		4	4	5.3	5. to 6.	0.002
HEXAGRAMMOS DECAGRAMMUS	T1	2	2	9.5	9. to 10.	0.005
HEXAGRAMMOS DECAGRAMMUS	T2	1	1	26.0	26. to 26.	0.100
AMMODYTES HEXAPTERUS		4	4	14.0	6. to 19.	0.017
ONCORHYNCHUS GORBUSCHA		2	2	38.0	32. to 44.	0.893
ONCORHYNCHUS KETA		1	1	39.0	39. to 39.	0.475
GASTEROSTEUS ACULEATUS		14	14	69.8	60. to 74.	52.400
THERAGRA CHALCOGRAMMA		18	18	13.3	10. to 19.	0.212

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	32	Copepodites	12	0.8
		Pseudocalanus minutus	23	1.4
		Copepod - unknown	3	1.2
		Calanus plumchrus	2	3.0
ONCORHYNCHUS GORBUSCHA	44	Pseudocalanus minutus	4	1.2

Copepod - unknown	2	1.1
Calanus plumchrus	6	1.8
Diptera	6	2.6

Location : OFF BELLE CHAIN ISLETS
Stn. code: 680124

Lat: 48 deg. 50.5 min. N
Long: 123 deg. 11.0 min. W

Date: 4/25/1968

Time set: 1712 Duration: 15. min.

Heading : 285 degrees

Tow number : 24
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THERAGRA CHALCOGRAMMA		140	140	11.6	4. to 20.	1.460
HEXAGRAMMOS DECAGRAMMUS		1	1	11.0	11. to 11.	0.006
AMMODYTES HEXAPTERUS		6	6	21.5	10. to 33.	0.134
SEBASTODES Type 2		34	34	5.9	4. to 8.	0.034
STICHAEIDAE (FAMILY)		1	1	19.0	19. to 19.	0.019
ONCORHYNCHUS GORBUSCHA		1	1	38.0	38. to 38.	0.424

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	38	Copepodites	2	0.8
		Coryacaeus angelicus	1	1.0
		Pseudocalanus minutus	31	1.2
		Calanus pacificus	32	2.6
		Sagitta elegans	1	10.7
THERAGRA CHALCOGRAMMA	5	Copepod nauplii	12	
THERAGRA CHALCOGRAMMA	8	Copepod nauplii	20	
		Copepodites	1	0.6
THERAGRA CHALCOGRAMMA	9	Copepod nauplii	15	

		Copepodites	2	0.6
THERAGRA CHALCOGRAMMA	10	Copepod nauplii	5	
		Copepodites	7	0.6
		Pseudocalanus minutus	4	1.5
THERAGRA CHALCOGRAMMA	11	Copepod nauplii	2	
		Copepodites	6	0.7
		Pseudocalanus minutus	3	1.3
THERAGRA CHALCOGRAMMA	12	Copepod nauplii	1	
		Copepodites	15	1.0
		Pseudocalanus minutus	2	1.3
THERAGRA CHALCOGRAMMA	14	Copepodites	7	0.7
		Pseudocalanus minutus	15	1.2
THERAGRA CHALCOGRAMMA	16	Copepodites	28	0.9
		Pseudocalanus minutus	7	1.3
		Acartia longiremis	1	1.2
THERAGRA CHALCOGRAMMA	18	Copepodites	24	0.7
		Pseudocalanus minutus	18	1.5
		Calanus pacificus	2	2.3
THERAGRA CHALCOGRAMMA	20	Copepodites	20	0.7
		Pseudocalanus minutus	23	1.3
SEBASTODES Type 2	5	Copepod nauplii	16	
SEBASTODES Type 2	6	Copepod nauplii	18	
SEBASTODES Type 2	7	Copepod nauplii	14	
SEBASTODES Type 2	8	Copepod nauplii	4	

Location : OFF ACTIVE PASS
Stn. code: 680201

Lat: 48 deg. 53.0 min. N
Long: 123 deg. 17.0 min. W

Date: 5/28/1968

Time set: 0910 Duration: 15. min.

Heading : 25 degrees

Tow number : 1
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ATHERESTHES STOMIAS		1	1	10.0	10. to 10.	0.004
THALEICHTHYS PACIFICUS		1808	80	6.3	5. to 11.	0.017
PLATICHTHYS STELLATUS		96	8	4.4	3. to 6.	0.004
CLUPEA PALLASII		2	2	14.0	13. to 15.	0.004
RONQUILUS JORDANI		1	1	23.0	23. to 23.	0.035
GOBIIDAE (FAMILY)		3	3	4.3	3. to 5.	0.001
ONCORHYNCHUS GORBUSCHA		2	2	67.5	52. to 83.	6.600
ONCORHYNCHUS KETA		3	3	79.0	72. to 85.	14.700
ONCORHYNCHUS KISUTCH		1	1	152.0	152. to 152.	38.500
ONCORHYNCHUS NERKA		23	23	90.2	77. to 110.	172.000
MERLUCCIUS PRODUCTUS		7	7	4.1	4. to 5.	0.003
COTTIDAE (FAMILY)	T1	1	1	6.0	6. to 6.	0.001
COTTIDAE (FAMILY)	T2	17	17	4.8	4. to 7.	0.010

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
ONCORHYNCHUS GORBUSCHA	52	Oikopleura	2	0.8
		Diptera - Cecidomyiidae	1	2.6

		Calanus plumchrus	1	4.1
ONCORHYNCHUS GORBUSCHA	83	Oikopleura	120	0.7
		Calanus plumchrus	55	4.5
		Euphausiacea	1	11.6
ONCORHYNCHUS KETA	72	Oikopleura	30	0.9
		Calanus plumchrus	38	4.5
ONCORHYNCHUS KETA	80	Calanus plumchrus	70	4.7
		Thysanoessa raschii	1	8.9
		Sagitta elegans	1	10.0
ONCORHYNCHUS KETA	85	Calanus plumchrus	150	4.2
		Hyperia sp.	1	4.1
		Thysanoessa raschii	2	13.4
ONCORHYNCHUS KISUTCH	152	Calanus plumchrus	5	4.6
		Hyperia sp.	1	3.6
		Thysanoessa raschii	1	14.0
		AMMODYTES HEXAPTERUS	1	17.3
ONCORHYNCHUS NERKA	77	Oikopleura	40	0.8
		Calanus plumchrus	40	4.0
ONCORHYNCHUS NERKA	80	Hyperia sp.	5	0.9
		Oikopleura	30	0.7
		Pseudocalanus minutus	4	1.3
		Calanus plumchrus	50	3.8
ONCORHYNCHUS NERKA	82	Balanus (cypris)	1	0.8
		Hyperia sp.	1	0.9
		Pseudocalanus minutus	1	1.4
		Hyperia sp.	2	1.2
		Euphausiid larvae	1	1.3
		Calanus plumchrus	50	4.8
		Hyperia sp.	1	4.4
		THALEICHTHYS PACIFICUS	1	7.6
		Sagitta elegans	1	6.2
		Sagitta elegans	2	15.0
ONCORHYNCHUS NERKA	84	Oikopleura	30	1.0
		Pseudocalanus minutus	2	1.4
		Epilabidocera amphitrites	2	1.4
		Calanus plumchrus	70	4.1
		THALEICHTHYS PACIFICUS	2	7.0

ONCORHYNCHUS NERKA	87	Balanus (cypris)	1	0.7
		Unknown	2	0.6
		Oikopleura	70	0.9
		Pseudocalanus minutus	1	1.5
		Epilabidocera amphitrites	1	1.5
		Euphausiid larvae	1	1.2
		Scina borealis	1	2.4
		Calanus plumchrus	37	4.5
		COTTIDAE (FAMILY)	1	19.2
ONCORHYNCHUS NERKA	90	Oikopleura	60	0.9
		Calanus plumchrus	125	5.0
ONCORHYNCHUS NERKA	93	Oikopleura	80	0.9
		Pseudocalanus minutus	1	1.1
		Calanus plumchrus	55	4.1
		Hyperia sp.	2	3.7
		THALEICHTHYS PACIFICUS	2	6.7
		Sagitta elegans	1	6.2
		Sagitta elegans	14	13.7
ONCORHYNCHUS NERKA	95	Oikopleura	65	0.6
		Pseudocalanus minutus	2	1.2
		Diptera - Cecidomyiidae	2	3.2
		Calanus plumchrus	160	4.9
		THALEICHTHYS PACIFICUS	1	6.5
		Sagitta elegans	1	10.0
ONCORHYNCHUS NERKA	99	Acartia clausi	1	1.5
		Pseudocalanus minutus	7	1.4
		Calanus plumchrus	63	4.0
ONCORHYNCHUS NERKA	105	Oikopleura	2	0.9
		Pseudocalanus minutus	1	1.4
		Calanus plumchrus	60	4.1
		Sagitta elegans	8	14.9
ONCORHYNCHUS NERKA	107	Oikopleura	50	0.7
		Pseudocalanus minutus	2	1.1
		Calanus plumchrus	45	4.3
		Thysanoessa raschii	1	14.4
		Sagitta elegans	6	9.4
ONCORHYNCHUS NERKA	110	Cladocera - Podon	1	0.9

Oikopleura	20	0.8
Acartia clausi	6	1.3
Pseudocalanus minutus	19	1.2
Epilabidocera amphitrites	1	1.3
Calanus plumchrus	170	3.7
THALEICHTHYS PACIFICUS	2	7.0
Sagitta elegans	19	11.9

Location : OFF BELLE CHAIN ISLETS
Stn. code: 680202

Lat: 48 deg. 50.0 min. N
Long: 123 deg. 11.0 min. W

Date: 5/28/1968

Time set: 1000 Duration: 15. min.

Heading : 90 degrees

Tow number : 2
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THALEICHTHYS PACIFICUS		256	64	6.2	5. to 9.	0.014
COTTIDAE (FAMILY)	T1	8	8	6.0	5. to 7.	0.009
COTTIDAE (FAMILY)	T2	24	24	5.8	4. to 9.	0.026
AGONIDAE (FAMILY)		1	1	4.0	4. to 4.	0.001
PLEURONECTIDAE (FAMILY)		1	1	7.0	7. to 7.	0.002
THERAGRA CHALCOGRAMMA		3	3	6.7	6. to 8.	0.003
AMMODYTES HEXAPTERUS		3	3	15.7	9. to 19.	0.019
CLUPEA PALLASII		1	1	24.0	24. to 24.	0.022

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
COTTIDAE (FAMILY)	4	Copepod nauplii	3	
COTTIDAE (FAMILY)	5	Copepod nauplii	4	
COTTIDAE (FAMILY)	6	Copepod nauplii	10	
COTTIDAE (FAMILY)	7	Copepod nauplii	15	
COTTIDAE (FAMILY)	8	Copepod nauplii	20	
COTTIDAE (FAMILY)	9	Copepod nauplii	32	

Location : 4 MI OFF ACTIVE PASS
Stn. code: 680203

Lat: 48 deg. 53.5 min. N
Long: 123 deg. 13.0 min. W

Date: 5/28/1968

Time set: 1135 Duration: 15. min.

Heading : 25 degrees

Tow number : 3
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THALEICHTHYS PACIFICUS	L	22000	200	6.5	5. to 11.	0.044
THALEICHTHYS PACIFICUS	PL	6	6	26.7	22. to 33.	0.242
CLUPEA PALLASII	L	688	43	15.1	13. to 17.	0.145
CLUPEA PALLASII	J	38	38	26.9	22. to 31.	1.700
CLUPEA PALLASII	AD	4	4	138.8	113. to 187.	107.400
LAMPETRA AYRESI		9	9	204.3	168. to 242.	961.000
ONCORHYNCHUS GORBUSCHA		6	6	121.0	111. to 148.	11.000
ONCORHYNCHUS KETA		3	3	77.0	58. to 90.	12.410
ONCORHYNCHUS KISUTCH		4	4	73.8	58. to 89.	14.700
ONCORHYNCHUS NERKA		6	6	113.2	86. to 132.	101.550
ONCORHYNCHUS TSHAWYTSCHA		57	57	81.5	67. to 107.	277.300
ONCORHYNCHUS MYKISS		2	2	115.0	103. to 127.	33.200
PSYCHROLUTES SIGALUTES		1	1	175.0	175. to 175.	46.000
AMMODYTES HEXAPTERUS		17	17	28.7	22. to 38.	11.900
AMMODYTES HEXAPTERUS	L	4	4	32.8	20. to 39.	0.325
MERLUCCIUS PRODUCTUS	PL	1	1	58.0	58. to 58.	0.575
PLEURONECTIDAE (FAMILY)		112	7	4.1	3. to 5.	0.002
PLEURONECTIDAE (FAMILY)	T1	64	4	6.8	6. to 7.	0.004
PLATICHTHYS STELLATUS	T2	1	1	14.0	14. to 14.	0.009
SEBASTODES Type 2		16	1	6.0	6. to 6.	0.001
		7	7	7.6	6. to 10.	0.017

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	14	Empty		
CLUPEA PALLASII	15	Copepod nauplii	1	
CLUPEA PALLASII	15	Empty		
CLUPEA PALLASII	15	Empty		
CLUPEA PALLASII	16	Empty		
CLUPEA PALLASII	17	Empty		
CLUPEA PALLASII	23	Empty		
CLUPEA PALLASII	27	Cladocera - Podon	1	0.9
CLUPEA PALLASII	28	Lecithaster gibbosus	4	0.9
		Pseudocalanus minutus	3	1.5
CLUPEA PALLASII	30	Empty		
CLUPEA PALLASII	31	Lecithaster gibbosus	1	0.9
		Pseudocalanus minutus	1	1.3
CLUPEA PALLASII	113	Hyperia sp.	7	0.8
		Oikopleura sp.	1	0.9
		Pseudocalanus minutus	6	1.4
		Brachyura zoea stage	1	2.1
		Calanus plumchrus	16	4.3
		THALEICHTHYS PACIFICUS	2	6.2
CLUPEA PALLASII	124	Calanus plumchrus	270	4.5
CLUPEA PALLASII	131	Calanus plumchrus	250	4.9
CLUPEA PALLASII	187	Hyperia sp.	1	0.9
		Brachyura zoea stage	1	2.5
		Calanus plumchrus	300	3.8
		THALEICHTHYS PACIFICUS	6	6.1
ONCORHYNCHUS GORBUSCHA	58	Cladocera - Podon	6	1.0
		Conchoecia sp.	1	0.7
		Pseudocalanus minutus	1	1.3
		Calliopius sp.	1	3.0
		Unknown insect	10	2.1
ONCORHYNCHUS GORBUSCHA	83	Oikopleura	75	0.7

		Pseudocalanus minutus	3	1.2
		Acartia sp.	1	1.3
		Euphausiid larvae	1	1.4
		Calanus plumchrus	14	4.8
ONCORHYNCHUS GORBUSCHA	90	Calanus plumchrus	6	3.9
ONCORHYNCHUS KETA	58	Cladocera - Evadne sp.	1	0.9
		Cladocera - Podon	2	0.8
		Conchoecia sp.	1	1.0
		Hyperia sp.	2	0.9
		Oikopleura sp.	12	0.6
		Calliopius sp.	7	3.2
		Calanus plumchrus	57	4.8
		MERLUCCIUS PRODUCTUS	15	4.0
		THALEICHTHYS PACIFICUS	17	10.9
ONCORHYNCHUS KETA	63	Calanus plumchrus	92	4.5
		MERLUCCIUS PRODUCTUS	2	4.0
ONCORHYNCHUS KETA	85	Calanus plumchrus	115	5.0
ONCORHYNCHUS KETA	89	Conchoecia sp.	1	0.7
		Hyperia sp.	1	0.6
		Acartia sp.	2	1.4
		Calanus plumchrus	1	4.1
ONCORHYNCHUS KISUTCH	86	Calanus plumchrus	36	4.0
ONCORHYNCHUS KISUTCH	124	Calanus plumchrus	1	3.6
		Thysanoessa raschii	48	12.3
ONCORHYNCHUS KISUTCH	128	Thysanoessa raschii	30	12.3
		Thysanoessa raschii	2	20.1
ONCORHYNCHUS KISUTCH	132	Thysanoessa raschii	14	11.3
		AMMODYTES HEXAPTERUS	1	22.7
		Euprimno sp.	1	5.9
ONCORHYNCHUS NERKA	67	Conchoecia sp.	1	0.8
		Hyperia sp.	1	0.6
		Oikopleura sp.	2	0.7
		Pseudocalanus minutus	1	1.4
		Calanus plumchrus	18	4.5
		MERLUCCIUS PRODUCTUS	6	4.4
		THALEICHTHYS PACIFICUS	10	7.1
ONCORHYNCHUS NERKA	72	Conchoecia sp.	3	0.9

		Hyperia sp.	6	0.7
		Pseudocalanus minutus	4	1.2
		Hyperia sp.	2	1.5
		Calanus plumchrus	80	3.6
		MERLUCCIUS PRODUCTUS	18	4.1
		THALEICHTHYS PACIFICUS	5	5.6
ONCORHYNCHUS NERKA	75	Hyperia sp.	1	0.8
		Pseudocalanus minutus	1	1.4
		Ostracoda - Philomedes sp.	6	2.5
		Calanus plumchrus	30	4.1
ONCORHYNCHUS NERKA	77	Cladocera - Podon	2	0.6
		Calanus plumchrus	20	3.9
		THALEICHTHYS PACIFICUS	6	6.9
ONCORHYNCHUS NERKA	78	Calanus plumchrus	110	3.7
		MERLUCCIUS PRODUCTUS	1	4.0
		THALEICHTHYS PACIFICUS	10	6.8
ONCORHYNCHUS NERKA	79	Cladocera - Podon	1	0.7
		Conchoecia sp.	2	0.7
		Copepodites	3	0.8
		Hyperia sp.	10	0.9
		Oikopleura sp.	20	1.0
		Pseudocalanus minutus	2	1.5
		Acartia sp.	1	1.3
		Hyperia sp.	31	1.5
		Hyperia sp.	2	1.7
		Calanus plumchrus	24	4.5
		MERLUCCIUS PRODUCTUS	4	3.7
		THALEICHTHYS PACIFICUS	18	6.3
ONCORHYNCHUS NERKA	81	Hyperia sp.	2	0.9
		Hyperia sp.	2	1.4
		Calanus plumchrus	60	4.7
		Unknown crab	1	3.8
		THALEICHTHYS PACIFICUS	8	7.3
ONCORHYNCHUS NERKA	84	Conchoecia sp.	2	0.7
		Hyperia sp.	50	0.9
		Pseudocalanus minutus	2	1.3
		Hyperia sp.	45	1.3

		Hyperia sp.	14	3.2
		Calanus plumchrus	130	4.6
		THALEICHTHYS PACIFICUS	6	5.6
		Sagitta elegans	1	18.7
ONCORHYNCHUS NERKA	88	Hyperia sp.	40	0.6
		Hyperia sp.	17	1.3
		Hyperia sp.	2	2.6
		Calanus plumchrus	75	4.4
		THALEICHTHYS PACIFICUS	32	6.2
ONCORHYNCHUS NERKA	90	Calanus plumchrus	70	3.7
		THALEICHTHYS PACIFICUS	2	7.3
ONCORHYNCHUS NERKA	102	Calanus plumchrus	120	3.8
ONCORHYNCHUS NERKA	107	Oikopleura sp.	4	1.0
		Hyperia sp.	1	1.1
		Calanus plumchrus	90	4.5
		THALEICHTHYS PACIFICUS	7	5.6
ONCORHYNCHUS TSHAWYTSCHA	103	Calanus plumchrus	4	4.3
		Thysanoessa raschii	1	16.4
		AMMODYTES HEXAPTERUS	5	28.2
ONCORHYNCHUS TSHAWYTSCHA	127	Thysanoessa raschii	45	10.6
ONCORHYNCHUS MYKISS	175	Pseudocalanus minutus	1	1.3
		Calanus plumchrus	42	4.7
		Coleoptera	13	8.0
		Gammaridae	1	10.6
		THALEICHTHYS PACIFICUS	2	14.7

Location : 4 MI OFF POINT ROBERTS
Stn. code: 680204

Lat: 48 deg. 56.5 min. N
Long: 123 deg. 9.0 min. W

Date: 5/28/1968

Time set: 1210 Duration: 15. min.

Heading : 25 degrees

Tow number : 4
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THALEICHTHYS PACIFICUS		10560	0			
CLUPEA PALLASII	L	880	55	15.1	12. to 18.	0.190
CLUPEA PALLASII	J	1	1	159.0	159. to 159.	36.500
LAMPETRA AYRESI		1	1	104.0	104. to 104.	0.820
PSYCHROLUTES SIGALUTES		2	2	28.5	28. to 29.	0.930
PLATICHTHYS STELLATUS		64	4	5.0	4. to 6.	0.004
ONCORHYNCHUS GORBUSCHA		1	1	83.0	83. to 83.	4.680
ONCORHYNCHUS KETA		3	3	70.3	58. to 78.	9.740
ONCORHYNCHUS KISUTCH		1	1	98.0	98. to 98.	8.200
ONCORHYNCHUS NERKA		62	62	76.0	63. to 87.	234.000
ONCORHYNCHUS TSHAWYTSCHA		8	8	93.0	88. to 102.	62.900

STOMACH CONTENTS

Species of fish examined	Fork length (mm.)	Type of Organism	Number of Organisms	Size (mm.)
CLUPEA PALLASII	105	Conchoecia elegans	25	1.0
		Euphausiid juveniles	1440	0.9
		Pseudocalanus minutus	200	1.1
		Acartia longiremis	130	1.3

		Calanus plumchrus	200	4.2
CLUPEA PALLASII	137	Conchoecia elegans	20	0.7
		Euphausiid juveniles	2200	0.9
		Pseudocalanus minutus	400	1.2
		Acartia longiremis	200	1.3
		Calanus plumchrus	110	4.0
CLUPEA PALLASII	156	Pseudocalanus minutus	6	1.4
		Calanus plumchrus	800	4.7
		Hyperia sp.	7	4.1
		THALEICHTHYS PACIFICUS	2	6.6
ONCORHYNCHUS KETA	58	Cladocera - Podon	1	0.7
		Oikopleura sp.	95	0.8
		Calliopius sp.	2	3.3
		Brachyura zoea stage	1	3.2
		Diptera	1	2.0
ONCORHYNCHUS KETA	78	Oikopleura sp.	200	0.7
		Calanus plumchrus	170	4.7
ONCORHYNCHUS KISUTCH	98	Diptera	1	1.9
		Calanus plumchrus	90	4.0
		Brachyura zoea stage	3	3.7
		Diptera	1	5.2
		Brachyura - megalops stage	1	6.5
		Coleoptera	5	7.8
		Euphausiacea	2	12.2
ONCORHYNCHUS NERKA	63	Parathemisto pacifica	19	0.8
		Oikopleura sp.	50	0.8
		Parathemisto pacifica	35	1.3
		Parathemisto pacifica	6	3.5
		Calanus plumchrus	60	3.8
ONCORHYNCHUS NERKA	66	Cladocera - Podon	3	0.8
		Conchoecia sp.	2	0.9
		Parathemisto pacifica	13	0.8
		Oikopleura sp.	10	0.8
		Parathemisto pacifica	40	1.1
		Centropages abdominalis	6	1.2
		Parathemisto pacifica	2	2.4
		Calanus plumchrus	60	4.0

ONCORHYNCHUS NERKA	69	Unknown	1	
		Conchoecia sp.	2	0.9
		Parathemisto pacifica	55	0.7
		Euphausiid juveniles	3	0.8
		Oikopleura sp.	100	0.9
		Parathemisto pacifica	90	1.3
		Pseudocalanus minutus	2	1.3
		Centropages abdominalis	4	1.3
		Epilabidocera amphitrites	2	1.3
		Parathemisto pacifica	3	2.0
		Brachyura zoea stage	1	3.2
		Unknown crab	3	2.3
		Calanus plumchrus	68	3.7
		THALEICHTHYS PACIFICUS	4	11.6
ONCORHYNCHUS NERKA	72	Cladocera - Podon	1	0.8
		Conchoecia sp.	1	0.9
		Parathemisto pacifica	31	0.6
		Corycaeus sp.	1	0.7
		Euphausiid juveniles	1	0.6
		Oikopleura sp.	40	0.7
		Parathemisto pacifica	33	1.1
		Centropages abdominalis	2	1.1
		Epilabidocera amphitrites	2	1.3
		Parathemisto pacifica	1	2.5
		Unknown crab	2	2.0
		Calanus plumchrus	110	4.7
		THALEICHTHYS PACIFICUS	2	13.9
ONCORHYNCHUS NERKA	73	Parathemisto pacifica	3	0.8
		Oikopleura sp.	140	0.9
		Parathemisto pacifica	12	1.4
		Epilabidocera amphitrites	2	2.5
		Unknown crab	3	1.6
		Calanus plumchrus	45	4.7
		Brachyura - megalops stage	2	5.7
		THALEICHTHYS PACIFICUS	1	8.9
ONCORHYNCHUS NERKA	75	Conchoecia sp.	2	1.0
		Parathemisto pacifica	8	0.7

		Oikopleura sp.	400	0.9
		Parathemisto pacifica	18	1.4
		Calanus plumchrus	52	4.9
		THALEICHTHYS PACIFICUS	3	11.0
ONCORHYNCHUS NERKA	79	Limacina helicina	1	
		Parathemisto pacifica	7	0.9
		Oikopleura sp.	35	0.6
		Parathemisto pacifica	86	1.4
		Pseudocalanus minutus	7	1.2
		Centropages abdominalis	2	1.2
		Acartia sp.	2	1.2
		Parathemisto pacifica	9	3.2
		Unknown crab	2	3.1
		Calanus plumchrus	74	4.6
ONCORHYNCHUS NERKA	81	Conchoecia sp.	23	0.6
		Parathemisto pacifica	12	0.7
		Euphausiid juveniles	44	0.7
		Oikopleura sp.	500	0.6
		Parathemisto pacifica	13	1.2
		Calanus plumchrus	12	4.3
		THALEICHTHYS PACIFICUS	3	11.0
ONCORHYNCHUS NERKA	85	Cladocera - Podon	1	0.8
		Conchoecia sp.	2	0.9
		Parathemisto pacifica	36	1.0
		Corycaeus sp.	1	0.9
		Oikopleura sp.	50	0.9
		Parathemisto pacifica	44	1.3
		Pseudocalanus minutus	1	1.3
		Centropages abdominalis	2	1.4
		Parathemisto pacifica	2	2.0
		Calanus plumchrus	2	4.0
ONCORHYNCHUS NERKA	87	Parathemisto pacifica	3	0.8
		Corycaeus sp.	2	1.0
		Oikopleura sp.	350	0.9
		Parathemisto pacifica	8	1.2
		Parathemisto pacifica	1	3.3
		Unknown crab	2	3.2

		Calanus plumchrus	36	4.0
		THALEICHTHYS PACIFICUS	4	10.8
ONCORHYNCHUS TSHAWYTSCHA	88	Calanus plumchrus	145	4.3
		Brachyura zoea stage	2	4.3
ONCORHYNCHUS TSHAWYTSCHA	91	Calanus plumchrus	170	4.4
ONCORHYNCHUS TSHAWYTSCHA	92	Calanus plumchrus	120	4.8
ONCORHYNCHUS TSHAWYTSCHA	98	Calanus plumchrus	35	4.1
		Brachyura zoea stage	3	4.1
ONCORHYNCHUS TSHAWYTSCHA	102	Calanus plumchrus	96	3.9

Location : OFF POINT ROBERTS
Stn. code: 680205

Lat: 48 deg. 56.7 min. N
Long: 123 deg. 7.0 min. W

Date: 5/28/1968

Time set: 1243 Duration: 15. min.

Heading : 25 degrees

Tow number : 5
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	360	45	11.5	8. to 17.	0.023
CLUPEA PALLASII	J	9	9	25.8	23. to 28.	0.305
CLUPEA PALLASII	AD	3	3	132.7	105. to 156.	71.200
CLUPEA PALLASII		8	8	167.1	146. to 218.	447.800
THALEICHTHYS PACIFICUS	L	8240	50	6.5	4. to 9.	0.011
THALEICHTHYS PACIFICUS	PL	2	2	32.5	29. to 36.	0.110

Location : OFF BOUNDARY BAY
Stn. code: 680206

Lat: 48 deg. 56.6 min. N
Long: 122 deg. 58.0 min. W

Date: 5/28/1968

Time set: 1343 Duration: 15. min.

Heading : 90 degrees

Tow number : 6
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	944	59	9.5	7. to 16.	0.030
CLUPEA PALLASII	J	15	15	26.5	22. to 32.	0.660
THALEICHTHYS PACIFICUS	L	1984	61	5.9	4. to 8.	0.027
THALEICHTHYS PACIFICUS	PL	1	1	27.0	27. to 27.	0.025
AMMODYTES HEXAPTERUS		4	4	28.3	21. to 40.	0.143
CYCLOPTERIDAE (FAMILY)		1	1	15.0	15. to 15.	0.019
PSYCHROLUTES SIGALUTES		2	2	25.0	25. to 25.	0.890
ONCORHYNCHUS GORBUSCHA		2	2	36.0	35. to 37.	0.590
ONCORHYNCHUS KISUTCH		1	1	154.0	154. to 154.	42.100
ONCORHYNCHUS NERKA		40	40	83.8	76. to 93.	221.970

Location : OFF TSAWWASSEN DOCK
Stn. code: 680207

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 10.0 min. W

Date: 5/28/1968

Time set: 1450 Duration: 15. min.

Heading : 260 degrees

Tow number : 7
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	1916	51	9.3	7. to 14.	0.031
CLUPEA PALLASII	J	52	52	25.6	19. to 30.	1.526
CLUPEA PALLASII	AD	6	6	155.7	125. to 192.	229.100
CLUPEA PALLASII		48	48	172.6	145. to 232.	2680.000
AMMODYTES HEXAPTERUS	L	2	2	23.5	21. to 26.	0.032
AMMODYTES HEXAPTERUS	PL	1	1	88.0	88. to 88.	1.760
THALEICHTHYS PACIFICUS	L	480	0			
THALEICHTHYS PACIFICUS	PL	1	1	22.0	22. to 22.	0.014
LAMPETRA AYRESI		2	2	117.5	115. to 120.	3.330
ONCORHYNCHUS GORBUSCHA		2	2	52.5	42. to 63.	2.530
ONCORHYNCHUS KETA		1	1	67.0	67. to 67.	2.350
ONCORHYNCHUS KISUTCH		1	1	154.0	154. to 154.	34.400
GASTEROSTEUS ACULEATUS		2	2	70.5	69. to 72.	7.520
SEBASTODES Type 2		2	2	7.0	6. to 8.	0.003
LEPIDOPSETTA BILINEATA		4	4	15.0	12. to 19.	
LYOPSETTA EXILIS		1	1	19.0	19. to 19.	

Location : OFF CANOE PASS BUOY
Stn. code: 680208

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 15.0 min. W

Date: 5/28/1968

Time set: 1542 Duration: 15. min.

Heading : 270 degrees

Tow number : 8
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	2044	64	11.4	7. to 17.	0.057
CLUPEA PALLASII	J	53	53	26.9	23. to 41.	2.690
CLUPEA PALLASII	AD	20	3	145.7	106. to 175.	95.350
ONCORHYNCHUS TSHAWYTSCHA		1	1	112.0	112. to 112.	14.200
PSYCHROLUTES SIGALUTES		3	3	27.3	25. to 29.	1.690
THALEICHTHYS PACIFICUS	L	9105	50	7.0	5. to 9.	0.009
THALEICHTHYS PACIFICUS	PL	38	38	26.7	21. to 39.	1.794
HYPOMESUS PRETIOSUS		5	5	73.4	32. to 132.	25.246
AMMODYTES HEXAPTERUS		1	1	35.0	35. to 35.	0.051

Location : OFF KNUCKLE BUOY
Stn. code: 680209

Lat: 49 deg. 5.0 min. N
Long: 123 deg. 20.0 min. W

Date: 5/28/1968

Time set: 1646 Duration: 15. min.

Heading : 325 degrees

Tow number : 9
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
RHAMPHOCOTTUS RICHARDSONI		1	1	18.0	18. to 18.	0.035
THERAGRA CHALCOGRAMMA		1	1	33.0	33. to 33.	0.184
AMMODYTES HEXAPTERUS	L	2	2	52.0	50. to 54.	0.820
RONQUILUS JORDANI		18	18	7.0	5. to 11.	0.015
GOBIIDAE (FAMILY)		2	2	5.0	5. to 5.	0.003
LAMPETRA AYRESI		4	4	125.3	119. to 133.	9.780
AMMODYTES HEXAPTERUS	PL	2	2	99.0	94. to 104.	5.960
ONCORHYNCHUS NERKA		14	14	80.4	67. to 97.	68.260
HYPOMESUS PRETIOSUS	T1	12	12	74.1	63. to 92.	36.550
HYPOMESUS PRETIOSUS	T2	3	3	149.7	145. to 156.	104.510
ONCORHYNCHUS TSHAWYTSCHA		3	3	97.0	64. to 130.	40.070
CLUPEA PALLASII	L	1349	100	14.2	9. to 18.	0.290
CLUPEA PALLASII	J	37	37	28.1	23. to 36.	2.170
CLUPEA PALLASII	AD	49	0			
THALEICHTHYS PACIFICUS	L	18496	0			
THALEICHTHYS PACIFICUS	PL	1200	200	28.2	19. to 38.	12.510
THALEICHTHYS PACIFICUS	AD	2	2	47.5	47. to 48.	1.280

Location : OFF SANDHEADS
Stn. code: 680210

Lat: 49 deg. 7.0 min. N
Long: 123 deg. 19.0 min. W

Date: 5/28/1968

Time set: 1723 Duration: 15. min.

Heading : 340 degrees

Tow number : 10
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		15	15	117.1	105. to 124.	30.300
CLUPEA PALLASII	L	352	0			
CLUPEA PALLASII	J	10	10	29.2	25. to 33.	0.685
CLUPEA PALLASII	AD	174	5	130.4	121. to 137.	133.800
SCORPAENICHTHYS MARMORATUS		1	1	7.0	7. to 7.	0.001
AMMODYTES HEXAPTERUS		15	15	48.0	42. to 56.	4.740
THALEICHTHYS PACIFICUS	L	3520	0			
THALEICHTHYS PACIFICUS	PL	75	50	28.9	22. to 35.	3.126
ONCORHYNCHUS KISUTCH		1	1	78.0	78. to 78.	5.210
ONCORHYNCHUS NERKA		4	4	80.3	71. to 94.	19.590
ONCORHYNCHUS TSHAWYTSCHA		2	2	101.5	93. to 110.	25.500

Location : OFF STURGEON BANK
Stn. code: 680211

Lat: 49 deg. 10.0 min. N
Long: 123 deg. 18.0 min. W

Date: 5/28/1968

Time set: 1814 Duration: 15. min.

Heading : 335 degrees

Tow number : 11
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		7	7	127.6	108. to 149.	18.200
CLUPEA PALLASII	L	8	8	28.8	26. to 33.	0.540
CLUPEA PALLASII	J	8	8	122.8	111. to 140.	162.200
CLUPEA PALLASII	AD	249	50	156.0	115. to 250.	2370.000
THALEICHTHYS PACIFICUS	L	750	0			
THALEICHTHYS PACIFICUS	PL	9	9	29.7	22. to 37.	0.680
AMMODYTES HEXAPTERUS	L	6	6	51.8	39. to 61.	2.612
AMMODYTES HEXAPTERUS	PL	3	3	113.0	102. to 121.	16.390
OPHIODON ELONGATUS		1	1	64.0	64. to 64.	1.220
ONCORHYNCHUS KISUTCH		3	3	110.3	82. to 129.	48.410
ONCORHYNCHUS NERKA		1	1	78.0	78. to 78.	4.060
ONCORHYNCHUS TSHAWYTSCHA	T1	2	2	115.5	115. to 116.	36.490
ONCORHYNCHUS TSHAWYTSCHA	T2	1	1	365.0	365. to 365.	

Location : OFF NORTH ARM-FRASER
Stn. code: 680212

Lat: 49 deg. 15.5 min. N
Long: 123 deg. 18.0 min. W

Date: 5/29/1968

Time set: 0445 Duration: 15. min.

Heading : 340 degrees

Tow number : 12
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		12	12	129.6	104. to 180.	32.300
CLUPEA PALLASII	L	8	8	31.0	29. to 33.	0.705
CLUPEA PALLASII	J	114	7	123.3	93. to 153.	153.600
HEXAGRAMMOS SPP.		1	1	12.0	12. to 12.	0.004
AMMODYTES HEXAPTERUS	L	7	7	47.4	43. to 54.	2.008
AMMODYTES HEXAPTERUS	PL	1	1	80.0	80. to 80.	1.770
THALEICHTHYS PACIFICUS		372	0			
ONCORHYNCHUS KETA		1	1	46.0	46. to 46.	0.760
ONCORHYNCHUS KISUTCH		1	1	108.0	108. to 108.	11.920
ONCORHYNCHUS NERKA		4	4	69.3	47. to 88.	12.840
ONCORHYNCHUS TSHAWYTSCHA		5	5	106.8	79. to 128.	73.580

Location : 4 MI OFF POINT GREY
Stn. code: 680213

Lat: 49 deg. 17.0 min. N
Long: 123 deg. 22.0 min. W

Date: 5/29/1968

Time set: 0527 Duration: 15. min.

Heading : 260 degrees

Tow number : 13
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		8	8	135.6	103. to 177.	26.400
CLUPEA PALLASII	L	36	9	13.6	9. to 17.	0.022
CLUPEA PALLASII	J	4	4	26.3	24. to 28.	0.167
CLUPEA PALLASII	AD	13	2	141.0	141. to 141.	59.700
THALEICHTHYS PACIFICUS		960	0			
GOBIIDAE (FAMILY)		8	2	4.0	4. to 4.	0.002
SEBASTODES Type 2		8	2	5.0	5. to 5.	0.003
PLEURONECTIDAE (FAMILY)		16	4	6.0	5. to 7.	0.003
AMMODYTES HEXAPTERUS		7	7	32.0	19. to 42.	0.487
ONCORHYNCHUS KISUTCH		3	3	102.0	95. to 107.	34.370
ONCORHYNCHUS NERKA		9	9	76.8	66. to 90.	36.400
ONCORHYNCHUS TSHAWYTSCHA		1	1	116.0	116. to 116.	18.050

Location : 5 MI OFF SANDHEADS
Stn. code: 680214

Lat: 49 deg. 6.5 min. N
Long: 123 deg. 25.0 min. W

Date: 5/29/1968

Time set: 0656 Duration: 15. min.

Heading : 205 degrees

Tow number : 14
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		9	9	123.0	104. to 142.	19.900
CLUPEA PALLASII	L	6	6	29.5	26. to 33.	0.416
CLUPEA PALLASII	J	4	4	127.3	111. to 145.	94.900
CLUPEA PALLASII	AD	1	1	220.0	220. to 220.	115.000
THALEICHTHYS PACIFICUS		106709	0			
AMMODYTES HEXAPTERUS		59	59	47.4	29. to 58.	18.700
PSYCHROLUTES SIGALUTES		5	5	27.2	25. to 30.	2.920
ONCORHYNCHUS KISUTCH		1	1	122.0	122. to 122.	18.020
ONCORHYNCHUS NERKA	T1	27	27	80.7	68. to 104.	129.900
ONCORHYNCHUS NERKA	T2	1	1	127.0	127. to 127.	19.190
ONCORHYNCHUS TSHAWYTSCHA		1	1	135.0	135. to 135.	26.270

Location : 5 MI OFF PORLIER PASS
Stn. code: 680215

Lat: 49 deg. 2.5 min. N
Long: 123 deg. 29.0 min. W

Date: 5/29/1968

Time set: 0746 Duration: 15. min.

Heading : 205 degrees

Tow number : 15
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		18	18	124.4	107. to 162.	41.500
CLUPEA PALLASII		15	15	27.7	24. to 32.	0.802
THALEICHTHYS PACIFICUS	L	20800	0			
THALEICHTHYS PACIFICUS	PL	3	3	31.0	28. to 36.	0.228
AMMODYTES HEXAPTERUS		107	107	46.9	30. to 59.	33.200
ONCORHYNCHUS NERKA		27	27	79.9	68. to 102.	121.900
ONCORHYNCHUS TSHAWYTSCHA		1	1	83.0	83. to 83.	6.400

Location : OFF PORLIER PASS
Stn. code: 680216

Lat: 49 deg. 1.5 min. N
Long: 123 deg. 34.0 min. W

Date: 5/29/1968

Time set: 0831 Duration: 15. min.

Heading : 205 degrees

Tow number : 16
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		2	2	119.5	115. to 124.	3.300
CLUPEA PALLASII	L	172	43	11.2	8. to 16.	0.055
CLUPEA PALLASII	J	15	15	28.7	25. to 35.	1.131
CLUPEA PALLASII	AD	19	4	130.0	120. to 142.	99.100
CLUPEA PALLASII		5	0			
THALEICHTHYS PACIFICUS	L	16800	0			
THALEICHTHYS PACIFICUS	PL	2	2	28.0	25. to 31.	0.103
AMMODYTES HEXAPTERUS	L	4	1	16.0	16. to 16.	0.004
AMMODYTES HEXAPTERUS	PL	6	6	41.5	28. to 52.	1.217
RHINOGOBIOPS NICHOLSI		8	2	4.5	4. to 5.	0.001
SEBASTODES Type 2		12	3	5.0	5. to 5.	0.003
PLATICHTHYS STELLATUS		12	3	6.7	6. to 7.	0.003
BATHYMASTERIDAE (FAMILY)		8	2	6.0	6. to 6.	0.004
PSYCHROLUTES SIGALUTES		7	7	30.3	25. to 42.	5.200
ONCORHYNCHUS GORBUSCHA		1	1	51.0	51. to 51.	0.910
ONCORHYNCHUS KISUTCH		1	1	121.0	121. to 121.	22.320
ONCORHYNCHUS NERKA		20	20	89.8	70. to 112.	134.900

Location : OFF PORLIER PASS
Stn. code: 680217

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 33.0 min. W

Date: 5/29/1968

Time set: 0907 Duration: 15. min.

Heading : 100 degrees

Tow number : 17
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		2	2	149.5	128. to 171.	8.600
CLUPEA PALLASII	L	80	5	14.2	13. to 15.	0.014
CLUPEA PALLASII	J	8	8	28.8	25. to 33.	0.631
CLUPEA PALLASII	AD	6	4	125.3	110. to 143.	91.300
AMMODYTES HEXAPTERUS	L	15	15	47.8	22. to 58.	5.203
AMMODYTES HEXAPTERUS	PL	1	1	111.0	111. to 111.	4.790
PSYCHROLUTES SIGALUTES		2	2	30.0	29. to 31.	1.780
GOBIIDAE (FAMILY)		16	1	4.0	4. to 4.	0.001
SEBASTODES Type 2		64	4	5.8	5. to 7.	0.004
PLEURONECTIDAE (FAMILY)		16	1	6.0	6. to 6.	0.001
THALEICHTHYS PACIFICUS	L	33865	50	6.4	5. to 12.	0.023
THALEICHTHYS PACIFICUS	PL	77	77	25.3	17. to 35.	3.230
ONCORHYNCHUS GORBUSCHA		8	8	54.6	46. to 61.	9.760
ONCORHYNCHUS KISUTCH		1	1	102.0	102. to 102.	10.060
ONCORHYNCHUS NERKA		3	3	89.7	86. to 96.	18.680
ONCORHYNCHUS TSHAWYTSCHA		1	1	101.0	101. to 101.	11.090

Location : OFF MID GALIANO IS
Stn. code: 680218

Lat: 48 deg. 57.5 min. N
Long: 123 deg. 28.0 min. W

Date: 5/29/1968

Time set: 1003 Duration: 15. min.

Heading : 100 degrees

Tow number : 18
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LEUROGLOSSUS SCHMIDTI		1	1	9.0	9. to 9.	0.002
MERLUCCIUS PRODUCTUS		4	4	5.0	5. to 5.	0.003
SCORPAENICHTHYS MARMORATUS		1	1	8.0	8. to 8.	0.002
PSYCHROLUTES SIGALUTES		2	2	26.5	22. to 31.	1.170
LAMPETRA AYRESI		2	2	135.5	99. to 172.	5.800
CLUPEA PALLASII	L	16	16	13.8	9. to 17.	0.028
CLUPEA PALLASII	J	9	9	29.1	27. to 30.	0.543
CLUPEA PALLASII	AD	45	5	125.8	114. to 140.	113.300
THALEICHTHYS PACIFICUS	L	236	0			
THALEICHTHYS PACIFICUS	PL	14	14	26.6	15. to 32.	0.609
AMMODYTES HEXAPTERUS		8	8	49.6	44. to 56.	2.760
PLATICHTHYS STELLATUS		1	1	265.0	265. to 265.	
ONCORHYNCHUS GORBUSCHA		5	5	66.4	52. to 83.	12.490
ONCORHYNCHUS KETA		2	2	68.5	38. to 99.	8.980
ONCORHYNCHUS KISUTCH		2	2	101.5	91. to 112.	22.130
ONCORHYNCHUS NERKA	T1	35	35	88.2	69. to 108.	214.500
ONCORHYNCHUS NERKA	T2	1	1	127.0	127. to 127.	17.740
ONCORHYNCHUS TSHAWYTSCHA		2	2	107.5	100. to 115.	29.790

Location : OFF SALAMANCA PT
Stn. code: 680219

Lat: 48 deg. 55.0 min. N
Long: 123 deg. 20.0 min. W

Date: 5/29/1968

Time set: 1105 Duration: 15. min.

Heading : 100 degrees

Tow number : 19
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		1	1	177.0	177. to 177.	7.600
CLUPEA PALLASII	L	1	1	30.0	30. to 30.	0.091
CLUPEA PALLASII	J	600	6	130.3	109. to 152.	143.100
AMMODYTES HEXAPTERUS		1	1	51.0	51. to 51.	0.430
PHOLIS LAETA		1	1	97.0	97. to 97.	2.230
ONCORHYNCHUS GORBUSCHA		28	28	52.2	38. to 69.	31.250
ONCORHYNCHUS KETA		5	5	57.0	37. to 73.	8.920
ONCORHYNCHUS KISUTCH		1	1	98.0	98. to 98.	10.630
ONCORHYNCHUS NERKA		16	16	84.2	65. to 111.	93.940
ONCORHYNCHUS TSHAWYTSCHA		8	8	106.0	90. to 123.	119.140

Location : INSIDE ACTIVE PASS
Stn. code: 680220

Lat: 48 deg. 51.5 min. N
Long: 123 deg. 18.0 min. W

Date: 5/29/1968

Time set: 1208 Duration: 15. min.

Heading : 140 degrees

Tow number : 20
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THALEICHTHYS PACIFICUS	L	67	67	7.1	5. to 13.	0.044
THALEICHTHYS PACIFICUS	PL	3	3	32.0	28. to 37.	0.190
THERAGRA CHALCOGRAMMA		6	6	5.0	5. to 5.	0.003
SEBASTODES Type 2		10	10	4.6	3. to 6.	0.004
ONCORHYNCHUS GORBUSCHA		144	144	58.9	40. to 109.	319.900
ONCORHYNCHUS KETA		23	23	69.5	52. to 98.	84.290
ONCORHYNCHUS KISUTCH		6	6	137.3	124. to 154.	181.530
ONCORHYNCHUS NERKA		4	4	99.5	96. to 104.	36.420
CLUPEA PALLASII		52	0			

Location : INSIDE ACTIVE PASS
Stn. code: 680301

Lat: 48 deg. 51.0 min. N
Long: 123 deg. 18.0 min. W

Date: 7/17/1968

Time set: 1709 Duration: 15. min.

Heading : 320 degrees

Tow number : 1
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3310	105	144.1	107. to 190.	3500.000
ONCORHYNCHUS GORBUSCHA		1	1	107.0	107. to 107.	11.770
ONCORHYNCHUS KETA		3	3	104.3	97. to 118.	31.760
ONCORHYNCHUS TSHAWYTSCHA		1	1	110.0	110. to 110.	14.420

Location : OFF ACTIVE PASS
Stn. code: 680302

Lat: 48 deg. 53.0 min. N
Long: 123 deg. 17.0 min. W

Date: 7/17/1968

Time set: 1745 Duration: 15. min.

Heading : 25 degrees

Tow number : 2
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	10	10	30.2	25. to 38.	1.364
CLUPEA PALLASII	J	3	3	81.7	71. to 89.	15.300
CLUPEA PALLASII	AD	110	5	142.2	125. to 159.	149.600
LAMPETRA AYRESI		1	1	235.0	235. to 235.	21.490
AMMODYTES HEXAPTERUS		2	2	97.0	91. to 103.	6.700
GASTEROSTEUS ACULEATUS		1	1	72.0	72. to 72.	2.870
ENGRAULIS MORDAX MORDAX		1	1	128.0	128. to 128.	18.150
ONCORHYNCHUS KETA		1	1	116.0	116. to 116.	16.300
ONCORHYNCHUS KISUTCH		3	3	161.0	137. to 178.	167.950
ONCORHYNCHUS NERKA		1	1	79.0	79. to 79.	4.950
ONCORHYNCHUS TSHAWYTSCHA		2	2	91.5	89. to 94.	13.840

Location : OFF BELLE CHAIN ISLETS
Stn. code: 680303

Lat: 48 deg. 50.0 min. N
Long: 123 deg. 12.0 min. W

Date: 7/17/1968

Time set: 1846 Duration: 15. min.

Heading : 90 degrees

Tow number : 3
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	6	6	25.7	22. to 28.	0.326
CLUPEA PALLASII	J	7	7	35.7	34. to 39.	1.905
CLUPEA PALLASII	AD	53	5	134.6	123. to 147.	123.500
THALEICHTHYS PACIFICUS		13	13	26.5	22. to 34.	0.390
GASTEROSTEUS ACULEATUS		25	25	26.6	23. to 31.	2.960
LAMPETRA AYRESI		1	1	231.0	231. to 231.	22.390
ONCORHYNCHUS GORBUSCHA		4	4	112.3	107. to 118.	55.240
ONCORHYNCHUS KISUTCH		2	2	177.5	176. to 179.	160.270
ONCORHYNCHUS TSHAWYTSCHA		1	1	84.0	84. to 84.	6.620

Location : 5 MI OFF ACTIVE PASS
Stn. code: 680304

Lat: 48 deg. 55.0 min. N
Long: 123 deg. 12.0 min. W

Date: 7/17/1968

Time set: 1952 Duration: 15. min.

Heading : 25 degrees

Tow number : 4
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	123	123	31.8	23. to 37.	22.300
CLUPEA PALLASII	J	11	0			
THALEICHTHYS PACIFICUS		24	24	26.8	21. to 31.	0.820
AMMODYTES HEXAPTERUS		1	1	89.0	89. to 89.	2.350
PAROPHRYS VETULUS		1	1	24.0	24. to 24.	0.070
RHINOGOBIOPS NICHOLSI		10	10	5.4	5. to 7.	0.005
ONCORHYNCHUS KISUTCH		4	4	200.3	188. to 220.	435.000
ONCORHYNCHUS TSHAWYTSCHA		1	1	190.0	190. to 190.	90.000

Location : OFF POINT ROBERTS
Stn. code: 680305

Lat: 48 deg. 56.0 min. N
Long: 123 deg. 8.0 min. W

Date: 7/18/1968

Time set: 0517 Duration: 15. min.

Heading : 25 degrees

Tow number : 5
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		2	2	158.0	141. to 175.	10.610
CLUPEA PALLASII	L	96	96	31.9	23. to 41.	15.800
CLUPEA PALLASII	J	620	81	93.5	84. to 101.	626.000
CLUPEA PALLASII	AD	310	40	135.3	117. to 169.	988.000
THALEICHTHYS PACIFICUS		1	1	16.0	16. to 16.	0.002
ENGRAULIS MORDAX MORDAX		2	2	24.5	23. to 26.	0.080
AMMODYTES HEXAPTERUS		2	2	91.0	88. to 94.	4.820
GASTEROSTEUS ACULEATUS		8	8	27.8	23. to 33.	1.140
HYPOMESUS PRETIOSUS		36	36	113.5	101. to 172.	456.090
ONCORHYNCHUS KETA		1	1	120.0	120. to 120.	15.960
ONCORHYNCHUS KISUTCH		3	3	180.0	170. to 190.	245.000
ONCORHYNCHUS NERKA		2	2	57.5	55. to 60.	3.240
ONCORHYNCHUS TSHAWYTSCHA		7	7	87.7	73. to 111.	52.960

Location : OFF BOUNDARY BAY
Stn. code: 680306

Lat: 48 deg. 56.5 min. N
Long: 122 deg. 57.0 min. W

Date: 7/18/1968

Time set: 0623 Duration: 15. min.

Heading : 90 degrees

Tow number : 6
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	83	83	29.5	20. to 36.	9.900
CLUPEA PALLASII	J	19	4	93.5	85. to 101.	29.800
CLUPEA PALLASII	AD	9	1	134.0	134. to 134.	25.900
THALEICHTHYS PACIFICUS		1	1	20.0	20. to 20.	0.005
LAMPETRA AYRESI		1	1	194.0	194. to 194.	12.450
ONCORHYNCHUS GORBUSCHA		1	1	110.0	110. to 110.	13.020
ONCORHYNCHUS KETA		3	3	116.7	107. to 130.	43.650
ONCORHYNCHUS KISUTCH		4	4	155.0	141. to 183.	207.140
ONCORHYNCHUS NERKA		2	2	121.0	119. to 123.	35.110
ONCORHYNCHUS TSHAWYTSCHA		2	2	105.0	80. to 130.	30.080
HYPOMESUS PRETIOSUS		1	1	152.0	152. to 152.	26.400

Location : 5 MI OFF POINT ROBERTS
Stn. code: 680307

Lat: 48 deg. 56.0 min. N
Long: 123 deg. 9.0 min. W

Date: 7/18/1968

Time set: 0757 Duration: 15. min.

Heading : 25 degrees

Tow number : 7
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	210	105	30.5	19. to 40.	15.750
CLUPEA PALLASII	J	31	0			
CLUPEA PALLASII	AD	41	0			
RHINOGOBIOPS NICHOLSI		4	4	4.3	4. to 5.	0.002
RONQUILUS JORDANI		15	15	6.5	6. to 11.	0.012
LAMPETRA AYRESI		1	1	125.0	125. to 125.	2.950
ENGRAULIS MORDAX MORDAX		1	1	119.0	119. to 119.	15.490
GASTEROSTEUS ACULEATUS		3	3	23.0	22. to 25.	0.290
AMMODYTES HEXAPTERUS		6	6	90.8	81. to 99.	18.070
ONCORHYNCHUS KISUTCH		2	2	202.5	200. to 205.	215.000
ONCORHYNCHUS TSHAWYTSCHA		3	3	98.3	82. to 125.	39.430

Location : OFF TSAWWASSEN DOCK
Stn. code: 680308

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 7.0 min. W

Date: 7/18/1968

Time set: 0845 Duration: 15. min.

Heading : 265 degrees

Tow number : 8
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	121	121	32.5	23. to 40.	23.900
CLUPEA PALLASII	J	572	10	89.5	81. to 98.	71.500
CLUPEA PALLASII	AD	1	1	275.0	275. to 275.	245.000
ENGRAULIS MORDAX MORDAX		4	4	25.8	24. to 29.	0.190
LAMPETRA AYRESI		1	1	127.0	127. to 127.	3.890
HYPOMESUS PRETIOSUS		3	3	116.0	109. to 126.	43.850
GASTEROSTEUS ACULEATUS		3	3	26.3	20. to 33.	0.440
AMMODYTES HEXAPTERUS		10	10	88.9	81. to 105.	27.410
ONCORHYNCHUS NERKA		1	1	51.0	51. to 51.	1.740

Location : OFF CANOE PASS BUOY
Stn. code: 680309

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 16.0 min. W

Date: 7/18/1968

Time set: 0947 Duration: 15. min.

Heading : 270 degrees

Tow number : 9
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	816	200	33.6	21. to 42.	42.460
CLUPEA PALLASII	J	89	9	88.6	76. to 96.	58.000
CLUPEA PALLASII	AD	12	3	136.7	130. to 150.	67.700
ENGRAULIS MORDAX MORDAX		1	1	26.0	26. to 26.	0.450
GASTEROSTEUS ACULEATUS	T1	32	32	25.2	19. to 35.	3.850
GASTEROSTEUS ACULEATUS	T2	2	2	59.0	53. to 65.	3.870
AMMODYTES HEXAPTERUS		8	8	81.3	76. to 87.	16.140
RHINOGOBIOPS NICHOLSI		3	3	8.0	5. to 14.	0.013
RONQUILUS JORDANI		2	2	10.5	10. to 11.	0.008
HYPOMESUS PRETIOSUS		2	2	151.5	149. to 154.	66.380
LAMPETRA AYRESI		2	2	179.0	117. to 241.	26.980
ONCORHYNCHUS NERKA		3	3	61.3	54. to 71.	6.340
ONCORHYNCHUS TSHAWYTSCHA		7	7	84.7	68. to 138.	58.060

Location : OFF KNUCKLE BUOY
Stn. code: 680310

Lat: 49 deg. 5.0 min. N
Long: 123 deg. 19.0 min. W

Date: 7/18/1968

Time set: 1035 Duration: 15. min.

Heading : 295 degrees

Tow number : 10
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	234	100	33.5	20. to 47.	22.400
CLUPEA PALLASII	J	33	7	82.0	61. to 96.	36.000
CLUPEA PALLASII	AD	11	3	135.3	132. to 139.	78.700
CLUPEA PALLASII		1	1	240.0	240. to 240.	170.000
ENGRAULIS MORDAX MORDAX		10	10	17.4	14. to 20.	0.119
LAMPETRA AYRESI		1	1	132.0	132. to 132.	3.060
GASTEROSTEUS ACULEATUS	T1	61	61	24.7	19. to 30.	7.110
GASTEROSTEUS ACULEATUS	T2	3	3	66.7	65. to 68.	7.820
AMMODYTES HEXAPTERUS		27	27	90.1	73. to 118.	70.600
SEBASTODES Type 2		13	13	10.4	6. to 14.	0.140
RONQUILUS JORDANI		4	4	9.8	8. to 11.	0.015
RHINOGOBIOPS NICHOLSI		5	5	11.0	9. to 12.	0.032
HYPOMESUS PRETIOSUS		5	5	136.4	112. to 153.	132.140
THALEICHTHYS PACIFICUS		390	100	29.5	19. to 40.	11.850
ONCORHYNCHUS NERKA		4	4	57.5	54. to 64.	7.990
ONCORHYNCHUS TSHAWYTSCHA		7	7	82.4	70. to 98.	44.140

Location : OFF SANDHEADS
Stn. code: 680311

Lat: 49 deg. 6.5 min. N
Long: 123 deg. 19.0 min. W

Date: 7/18/1968

Time set: 1136 Duration: 15. min.

Heading : 340 degrees

Tow number : 11
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	85	85	27.6	18. to 37.	7.200
CLUPEA PALLASII	J	2	2	87.0	84. to 90.	11.600
CLUPEA PALLASII	AD	1	1	151.0	151. to 151.	27.800
RONQUILUS JORDANI		2	2	11.5	11. to 12.	0.020
SCORPAENICHTHYS MARMORATUS		1	1	11.0	11. to 11.	0.010
RHINOGOBIOPS NICHOLSI		6	6	8.2	5. to 11.	0.020
SEBASTODES Type 2		52	52	6.4	5. to 11.	0.120
ENGRAULIS MORDAX MORDAX		13	13	23.2	17. to 30.	0.561
GASTEROSTEUS ACULEATUS		9	9	24.0	21. to 27.	0.910
THALEICHTHYS PACIFICUS		77	30	29.1	19. to 43.	2.730
HYPOMESUS PRETIOSUS		1	1	113.0	113. to 113.	13.300
LAMPETRA AYRESI		3	3	134.0	100. to 196.	11.630
ONCORHYNCHUS KISUTCH		20	20	180.9	157. to 194.	1643.000
ONCORHYNCHUS NERKA		5	5	82.8	56. to 122.	34.810
ONCORHYNCHUS TSHAWYTSCHA		3	3	83.0	79. to 86.	18.730

Location : OFF SEWER OUTFALL
Stn. code: 680312

Lat: 49 deg. 12.0 min. N
Long: 123 deg. 20.0 min. W

Date: 7/18/1968

Time set: 1226 Duration: 15. min.

Heading : 340 degrees

Tow number : 12
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		6	6	161.2	115. to 197.	33.920
CLUPEA PALLASII	L	182	182	25.7	21. to 33.	10.500
CLUPEA PALLASII	J	1	1	94.0	94. to 94.	7.100
CLUPEA PALLASII	AD	1	1	133.0	133. to 133.	21.900
ENGRAULIS MORDAX MORDAX	T1	225	224	21.6	12. to 39.	7.894
ENGRAULIS MORDAX MORDAX	T2	1	1	108.0	108. to 108.	10.130
RONQUILUS JORDANI		1	1	11.0	11. to 11.	0.005
SEBASTODES Type 2		28	28	6.1	5. to 8.	0.030
AGONOPSIS VULSA		1	1	11.0	11. to 11.	0.001
THALEICHTHYS PACIFICUS		3	3	20.0	17. to 22.	0.034
ONCORHYNCHUS GORBUSCHA		1	1	113.0	113. to 113.	13.130
ONCORHYNCHUS KISUTCH		3	3	129.3	105. to 142.	79.970
ONCORHYNCHUS TSHAWYTSCHA		3	3	99.0	83. to 120.	34.770
GASTEROSTEUS ACULEATUS	T1	4	4	23.0	21. to 25.	0.356
GASTEROSTEUS ACULEATUS	T2	2	2	65.0	62. to 68.	4.570
SYNGNATHUS LEPTORHYNCHUS		1	1	31.0	31. to 31.	0.010
BATHYMASTER SIGNATUS		4	4	12.0	12. to 12.	0.037
HYPOMESUS PRETIOSUS		4	4	28.3	27. to 30.	0.202
LEPIDOGOBIUS LEPIDUS		49	49	9.7	4. to 15.	0.281

Location : OFF POINT GREY
Stn. code: 680313

Lat: 49 deg. 15.0 min. N
Long: 123 deg. 18.0 min. W

Date: 7/18/1968

Time set: 1313 Duration: 15. min.

Heading : 340 degrees

Tow number : 13
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	220	55	28.6	23. to 34.	4.770
CLUPEA PALLASII	J	211	17	94.9	87. to 100.	136.800
CLUPEA PALLASII	AD	37	10	133.3	115. to 157.	247.800
CLUPEA PALLASII		1	1	229.0	229. to 229.	140.000
RONQUILUS JORDANI		2	2	10.0	9. to 11.	0.009
RHINOGOBIOPS NICHOLSI		1	1	15.0	15. to 15.	0.015
GASTEROSTEUS ACULEATUS	T1	43	43	25.9	21. to 31.	5.600
GASTEROSTEUS ACULEATUS	T2	4	4	66.5	60. to 73.	10.980
THALEICHTHYS PACIFICUS		6	6	25.7	21. to 30.	0.162
ENGRAULIS MORDAX MORDAX	T1	34	34	27.9	17. to 39.	2.370
ENGRAULIS MORDAX MORDAX	T2	2	2	122.5	92. to 153.	37.260
LAMPETRA AYRESI		4	4	156.3	108. to 199.	27.930
ONCORHYNCHUS KISUTCH		1	1	72.0	72. to 72.	4.240
ONCORHYNCHUS NERKA		6	6	58.8	54. to 62.	12.200
ONCORHYNCHUS TSHAWYTSCHA		8	8	84.5	69. to 120.	59.050

Location : 5 MI OFF POINT GREY
Stn. code: 680314

Lat: 49 deg. 17.0 min. N
Long: 123 deg. 20.0 min. W

Date: 7/18/1968

Time set: 1353 Duration: 15. min.

Heading : 270 degrees

Tow number : 14
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	210	100	27.6	20. to 33.	7.750
CLUPEA PALLASII	J	1	1	99.0	99. to 99.	8.750
CLUPEA PALLASII	AD	1	1	137.0	137. to 137.	27.500
ENGRAULIS MORDAX MORDAX		151	151	21.4	12. to 38.	4.640
GASTEROSTEUS ACULEATUS	T1	14	14	26.0	22. to 32.	1.630
GASTEROSTEUS ACULEATUS	T2	1	1	72.0	72. to 72.	3.870
SYNGNATHUS LEPTORHYNCHUS		1	1	22.0	22. to 22.	0.010
THALEICHTHYS PACIFICUS		4	4	27.3	24. to 31.	0.120
BROSMOPHYCIS MARGINATA		1	1	15.0	15. to 15.	0.009
LAMPETRA AYRESI		7	7	192.3	169. to 237.	79.490
ONCORHYNCHUS KISUTCH		3	3	118.3	78. to 153.	78.440
ONCORHYNCHUS TSHAWYTSCHA		2	2	118.5	113. to 124.	37.570
RHINOGOBIOPS NICHOLSI		3	3	10.0	8. to 13.	0.010

Location : 5 MI OFF SANDHEADS
Stn. code: 680315

Lat: 49 deg. 6.5 min. N
Long: 123 deg. 24.0 min. W

Date: 7/19/1968

Time set: 0703 Duration: 15. min.

Heading : 205 degrees

Tow number : 15
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		82	82	26.1	20. to 33.	5.550
ENGRAULIS MORDAX MORDAX		196	196	23.7	7. to 37.	8.460
ONCORHYNCHUS GORBUSCHA		2	2	110.5	109. to 112.	26.660
ONCORHYNCHUS NERKA		1	1	50.0	50. to 50.	1.040
AMMODYTES HEXAPTERUS		1	1	84.0	84. to 84.	1.670
GASTEROSTEUS ACULEATUS	T1	6	6	28.0	24. to 31.	0.960
GASTEROSTEUS ACULEATUS	T2	3	3	66.7	62. to 70.	6.890
SEBASTES CAURINUS		8	8	22.8	13. to 37.	2.250
SEBASTES NIGROCINCTUS		2	2	36.5	31. to 42.	1.630
SEBASTODES Type 2		7	7	6.0	5. to 8.	0.020
RHINOGOBIOPS NICHOLSI		30	30	6.9	4. to 11.	0.053
RONQUILUS JORDANI		1	1	10.0	10. to 10.	0.004
CITHARICHTHYS STIGMAEUS		9	9	5.0	3. to 9.	0.009

Location : 5 MI OFF PORLIER PASS
Stn. code: 680316

Lat: 49 deg. 4.0 min. N
Long: 123 deg. 30.0 min. W

Date: 7/19/1968

Time set: 0809 Duration: 15. min.

Heading : 205 degrees

Tow number : 16
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		30	30	27.5	22. to 31.	1.172
ENGRAULIS MORDAX MORDAX		120	0			
RHINOGOBIOPS NICHOLSI		11	11	9.1	4. to 16.	0.054
SEBASTES CAURINUS		2	2	21.0	19. to 23.	0.260
SEBASTES NIGROCINCTUS		1	1	34.0	34. to 34.	0.550
GASTEROSTEUS ACULEATUS		1	1	23.0	23. to 23.	0.080
AGONOPSIS VULSA		1	1	11.0	11. to 11.	0.006
COTTIDAE (FAMILY)		1	1	6.0	6. to 6.	0.003
SYNGNATHUS LEPTORHYNCHUS		2	2	43.0	22. to 64.	0.073
SEBASTODES Type 2		120	25	6.0	5. to 9.	0.220
CITHARICHTHYS STIGMAEUS		9	9	11.9	6. to 14.	0.116

Location : ABOVE PORLIER PASS
Stn. code: 680317

Lat: 49 deg. 1.5 min. N
Long: 123 deg. 34.0 min. W

Date: 7/19/1968

Time set: 0852 Duration: 15. min.

Heading : 205 degrees

Tow number : 17
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		4	4	27.8	26. to 29.	0.220
ENGRAULIS MORDAX MORDAX		7	7	27.0	21. to 31.	0.446
ONCORHYNCHUS GORBUSCHA		1	1	100.0	100. to 100.	10.500
GASTEROSTEUS ACULEATUS	T1	2	2	27.0	25. to 29.	0.280
GASTEROSTEUS ACULEATUS	T2	1	1	68.0	68. to 68.	2.080
SYNGNATHUS LEPTORHYNCHUS		1	1	62.0	62. to 62.	0.070
CITHARICHTHYS STIGMAEUS		1	1	14.0	14. to 14.	0.017
SEBASTODES Type 2		53	53	6.5	4. to 14.	0.216

Location : BELOW PORLIER PASS
Stn. code: 680318

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 34.0 min. W

Date: 7/19/1968

Time set: 0928 Duration: 15. min.

Heading : 110 degrees

Tow number : 18
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3	3	26.0	24. to 27.	0.146
ENGRAULIS MORDAX MORDAX		2	2	29.5	27. to 32.	0.167
CITHARICHTHYS STIGMAEUS		10	10	9.5	5. to 13.	0.053
COTTIDAE (FAMILY)		2	2	10.0	10. to 10.	0.017
RHINOGOBIOPS NICHOLSI		12	12	7.8	6. to 11.	0.026
SEBASTODES Type 2		106	106	6.1	4. to 9.	0.229

Location : OFF GALIANO IS
Stn. code: 680319

Lat: 48 deg. 57.0 min. N
Long: 123 deg. 28.0 min. W

Date: 7/19/1968

Time set: 1025 Duration: 15. min.

Heading : 105 degrees

Tow number : 19
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3	3	24.0	23. to 26.	0.172
ENGRAULIS MORDAX MORDAX		9	9	18.0	9. to 29.	0.190
ONCORHYNCHUS KETA		1	1	128.0	128. to 128.	16.210
CITHARICHTHYS STIGMAEUS		2	2	15.5	11. to 20.	0.060
PLATICHTHYS STELLATUS		1	1	11.0	11. to 11.	0.016
SCORPAENICHTHYS MARMORATUS		2	2	10.5	10. to 11.	0.024
AGONOPSIS VULSA		5	5	9.0	6. to 10.	0.005
RHINOGOBIOPS NICHOLSI		26	26	8.8	6. to 16.	0.096
SEBASTODES Type 2		26	26	5.8	5. to 8.	0.042

Location : OFF SALAMANCA PT
Stn. code: 680320

Lat: 48 deg. 55.0 min. N
Long: 123 deg. 20.0 min. W

Date: 7/19/1968

Time set: 1126 Duration: 15. min.

Heading : 105 degrees

Tow number : 20
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		5	5	28.8	26. to 32.	0.490
ENGRAULIS MORDAX MORDAX		13	13	23.5	7. to 38.	0.781
CITHARICHTHYS STIGMAEUS		2	2	11.0	9. to 13.	0.014
RHINOGOBIOPS NICHOLSI		19	19	8.6	4. to 17.	0.074
SEBASTODES Type 2		102	50	5.5	4. to 7.	0.108
AGONOPSIS VULSA		4	4	10.8	10. to 11.	0.012
THALEICHTHYS PACIFICUS		1	1	27.0	27. to 27.	0.041
ONCORHYNCHUS GORBUSCHA		2	2	107.0	102. to 112.	26.820
ONCORHYNCHUS KETA		4	4	115.5	107. to 122.	71.270
ONCORHYNCHUS NERKA		1	1	112.0	112. to 112.	15.100

Location : ACTIVE PASS-WEST
Stn. code: 680321

Lat: 48 deg. 51.5 min. N
Long: 123 deg. 20.0 min. W

Date: 7/19/1968

Time set: 1216 Duration: 15. min.

Heading : 240 degrees

Tow number : 21
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LEPIDOPSETTA BILINEATA		2	2	26.5	25. to 28.	0.255
CLUPEA PALLASII		10	10	25.4	19. to 31.	0.560
RHINOGOBIOPS NICHOLSI		3	3	6.7	5. to 9.	0.004
CITHARICHTHYS STIGMAEUS		1	1	5.0	5. to 5.	0.001
GASTEROSTEUS ACULEATUS		1	1	29.0	29. to 29.	0.170
GOBIIDAE (FAMILY)		3	3	8.0	7. to 9.	0.006
AGONIDAE (FAMILY)		1	1	14.0	14. to 14.	0.011
SEBASTODES Type 2		11	11	5.1	4. to 7.	0.012
THALEICHTHYS PACIFICUS		14	14	22.5	15. to 31.	0.700
ONCORHYNCHUS GORBUSCHA		12	12	101.7	95. to 110.	127.010
ONCORHYNCHUS KETA		8	8	98.9	89. to 109.	77.660

5.1.2. Data for 1969

Location : ACTIVE PASS-WEST
Stn. code: 690101

Lat: 48 deg. 51.5 min. N
Long: 123 deg. 20.3 min. W

Date: 4/15/1969

Time set: 1700 Duration: 15. min.

Heading : degrees

Tow number : 1
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
HEXAGRAMMOS STELLERI		1	1	44.0	44. to 44.	0.360
STICHAEIDAE (FAMILY)		18	18	8.4	5. to 16.	0.024
PLATICHTHYS STELLATUS		1	1	7.0	7. to 7.	0.008
COTTIDAE (FAMILY)	T1	11	11	4.5	4. to 6.	0.014
COTTIDAE (FAMILY)	T2	1	1	13.0	13. to 13.	0.026
OPHIODON ELONGATUS		8	8	10.5	8. to 15.	0.031
HEXAGRAMMOS SPP.		1	1	44.0	44. to 44.	0.409
THERAGRA CHALCOGRAMMA		36	36	5.1	3. to 11.	0.032
CRYPTACANTHODES ALEUTENSIS		21	21	15.6	9. to 19.	0.233
AMMODYTES HEXAPTERUS		56	56	20.8	11. to 31.	0.748

Location : ACTIVE PASS-EAST
Stn. code: 690102

Lat: 48 deg. 51.0 min. N
Long: 123 deg. 18.0 min. W

Date: 4/15/1969

Time set: 1810 Duration: 15. min.

Heading : degrees

Tow number : 2
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1	1	14.0	14. to 14.	0.002
HEXAGRAMMOS STELLERI		1	1	30.0	30. to 30.	0.150
AMMODYTES HEXAPTERUS		121	121	19.1	6. to 30.	1.494
CRYPTACANTHODES ALEUTENSIS		16	16	14.6	4. to 21.	0.160
THERAGRA CHALCOGRAMMA		80	80	5.5	3. to 11.	0.070
LEUROGLOSSUS SCHMIDTI		1	1	12.0	12. to 12.	0.003
OPHIODON ELONGATUS	T1	7	7	9.7	7. to 12.	0.028
OPHIODON ELONGATUS	T2	1	1	27.0	27. to 27.	0.060

Location : OFF ACTIVE PASS
Stn. code: 690103

Lat: 48 deg. 53.0 min. N
Long: 123 deg. 17.0 min. W

Date: 4/15/1969

Time set: 1850 Duration: 15. min.

Heading : degrees

Tow number : 3
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
HEMILEPIDOTUS HEMILEPIDOTUS		1	1	17.0	17. to 17.	0.052
THERAGRA CHALCOGRAMMA	T1	429	16	5.3	4. to 7.	0.015
THERAGRA CHALCOGRAMMA	T2	15	15	10.2	8. to 16.	0.095
AMMODYTES HEXAPTERUS		22	22	17.8	9. to 27.	0.235
CRYPTACANTHODES ALEUTENSIS		8	8	14.3	12. to 19.	0.084

Location : OFF BELLE CHAIN ISLETS
Stn. code: 690104

Lat: 48 deg. 50.0 min. N
Long: 123 deg. 11.0 min. W

Date: 4/15/1969

Time set: 1940 Duration: 15. min.

Heading : degrees

Tow number : 4
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
PSYCHROLUTES SIGALUTES		1	1	42.0	42. to 42.	1.520
RHAMPHOCOTTUS RICHARDSONI		3	3	12.0	10. to 13.	0.070
STICHAEIDAE (FAMILY)		4	4	9.5	6. to 12.	0.009
AGONOPSIS VULSA		1	1	11.0	11. to 11.	0.007
AMMODYTES HEXAPTERUS		4	4	22.3	14. to 27.	0.056
PLEURONECTIDAE (FAMILY)		1	1	7.0	7. to 7.	0.005
THERAGRA CHALCOGRAMMA	T1	204	19	5.9	3. to 7.	0.266
THERAGRA CHALCOGRAMMA	T2	9	9	9.9	9. to 12.	0.046

Location : 4 MI OFF ACTIVE PASS
Stn. code: 690105

Lat: 48 deg. 54.0 min. N
Long: 123 deg. 12.0 min. W

Date: 4/16/1969

Time set: 0810 Duration: 15. min.

Heading : degrees

Tow number : 5
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
HEXAGRAMMOS STELLERI		1	1	49.0	49. to 49.	0.710
GASTEROSTEUS ACULEATUS		1	1	64.0	64. to 64.	2.570
THERAGRA CHALCOGRAMMA	T1	137	15	4.7	3. to 7.	0.080
THERAGRA CHALCOGRAMMA	T2	8	8	9.5	8. to 11.	0.035
STICHAEIDAE (FAMILY)		7	7	9.9	4. to 14.	0.016
CRYPTACANTHODES ALEUTENSIS		10	10	13.1	9. to 20.	0.078
AMMODYTES HEXAPTERUS		22	22	16.2	9. to 28.	0.158

Location : 4 MI OFF POINT ROBERTS
Stn. code: 690106

Lat: 48 deg. 56.0 min. N
Long: 123 deg. 9.0 min. W

Date: 4/16/1969

Time set: 0845 Duration: 15. min.

Heading : degrees

Tow number : 6
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		20	20	11.5	7. to 16.	0.020
GASTEROSTEUS ACULEATUS		16	16	64.8	61. to 70.	40.500
CRYPTACANTHODES ALEUTENSIS	T1	14	14	14.6	9. to 20.	0.124
CRYPTACANTHODES ALEUTENSIS	T2	1	1	30.0	30. to 30.	0.062
PSYCHROLUTES SIGALUTES		4	4	43.3	33. to 48.	7.660
THERAGRA CHALCOGRAMMA	T1	853	20	5.5	4. to 7.	0.391
THERAGRA CHALCOGRAMMA	T2	8	8	9.3	8. to 11.	0.035
PLEURONECTIDAE (FAMILY)		12	12	5.6	5. to 8.	0.014
AGONIDAE (FAMILY)		3	3	5.3	4. to 7.	0.001
COTTIDAE (FAMILY)		12	12	5.8	4. to 9.	0.015
STICHAEIDAE (FAMILY)		19	19	5.3	3. to 9.	0.010
AMMODYTES HEXAPTERUS	L	153	21	10.5	5. to 17.	0.175
AMMODYTES HEXAPTERUS	PL	30	30	24.4	18. to 31.	0.647

Location : OFF POINT ROBERTS
Stn. code: 690107

Lat: 48 deg. 58.0 min. N
Long: 123 deg. 7.0 min. W

Date: 4/16/1969

Time set: 0930 Duration: 15. min.

Heading : degrees

Tow number : 7
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)

No catch.

Location : BOUNDARY BAY BUOY
Stn. code: 690108

Lat: 48 deg. 56.5 min. N
Long: 122 deg. 57.0 min. W

Date: 4/16/1969

Time set: 1010 Duration: 15. min.

Heading : degrees

Tow number : 8
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		200	150	15.0	7. to 21.	0.556
CRYPTACANTHODES ALEUTENSIS		48	48	21.5	10. to 31.	1.580
PLEURONECTIDAE (FAMILY)		30	10	5.2	4. to 7.	0.006
STICHAEIDAE (FAMILY)		51	17	10.8	9. to 13.	0.034
AMMODYTES HEXAPTERUS	L	612	30	11.2	8. to 16.	0.423
AMMODYTES HEXAPTERUS	PL	252	30	26.8	19. to 36.	3.160
HEMILEPIDOTUS HEMILEPIDOTUS		18	6	8.5	6. to 11.	0.024
HEXAGRAMMOS SPP.		3	1	37.0	37. to 37.	0.282
COTTIDAE (FAMILY)		15	5	5.0	5. to 5.	0.004
AGONOPSIS VULSA		6	2	17.5	11. to 24.	0.024
PSYCHROLUTES SIGALUTES		33	11	11.1	6. to 18.	0.174
THERAGRA CHALCOGRAMMA		75	25	7.0	4. to 13.	0.140

Location : TSAWWASSEN DOCK
Stn. code: 690109

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 10.0 min. W

Date: 4/16/1969

Time set: 1115 Duration: 15. min.

Heading : degrees

Tow number : 9
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	303	200	14.4	7. to 20.	0.515
CLUPEA PALLASII	J	1	1	177.0	177. to 177.	59.600
HYPOMESUS PRETIOSUS		2	2	49.5	45. to 54.	1.240
GASTEROSTEUS ACULEATUS		4	4	64.3	60. to 69.	10.210
HEXAGRAMMOS STELLERI		1	1	42.0	42. to 42.	0.470
AMMODYTES HEXAPTERUS		1488	372	19.8	7. to 38.	4.804
THERAGRA CHALCOGRAMMA		24	24	6.3	4. to 13.	108.690
HEMILEPIDOTUS HEMILEPIDOTUS		8	2	11.0	7. to 15.	0.050
OPHIODON ELONGATUS		8	2	8.5	5. to 12.	0.009
PSYCHROLUTES SIGALUTES		32	8	8.4	5. to 13.	0.065
CRYPTACANTHODES ALEUTENSIS		56	14	18.9	14. to 23.	0.308
STICHAEIDAE (FAMILY)		52	13	20.6	14. to 35.	0.229

Location : CANOE PASS BUOY
Stn. code: 690110

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 15.0 min. W

Date: 4/16/1969

Time set: 1215 Duration: 15. min.

Heading : degrees

Tow number : 10
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1040	500	14.9	7. to 21.	2.096
GASTEROSTEUS ACULEATUS		1	1	63.0	63. to 63.	2.180
HEXAGRAMMOS STELLERI		1	1	56.0	56. to 56.	1.270
ONCORHYNCHUS KETA		14	14	38.7	35. to 45.	5.670
CRYPTACANTHODES ALEUTENSIS		10	10	19.1	11. to 26.	0.243
THERAGRA CHALCOGRAMMA		768	25	5.8	4. to 9.	0.030
AMMODYTES HEXAPTERUS		2016	30	18.5	11. to 25.	2.596
LUMPENUS SAGITTA		136	17	35.4	28. to 42.	1.063
PSYCHROLUTES SIGALUTES		1	1	16.0	16. to 16.	0.051
COTTIDAE (FAMILY)		40	5	5.2	5. to 6.	0.003
ANOPLARCHUS PURPURESCENS		96	12	20.5	10. to 30.	0.192

Location : KNUCKLE BUOY
Stn. code: 690111

Lat: 49 deg. 4.0 min. N
Long: 123 deg. 19.0 min. W

Date: 4/16/1969

Time set: 1253 Duration: 15. min.

Heading : degrees

Tow number : 11
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		75	75	15.3	8. to 20.	0.149
HYPOMESUS PRETIOSUS		5	5	53.6	50. to 59.	3.840
GASTEROSTEUS ACULEATUS		1	1	60.0	60. to 60.	2.300
ONCORHYNCHUS KETA		28	28	37.5	34. to 44.	9.110
ONCORHYNCHUS KISUTCH		3	3	38.0	37. to 39.	1.280
AMMODYTES HEXAPTERUS		371	176	23.1	11. to 43.	7.660
LEUROGLOSSUS SCHMIDTI		11	11	10.0	6. to 15.	0.010
CRYPTACANTHODES ALEUTENSIS		4	4	19.5	13. to 24.	0.066
PLEURONECTIDAE (FAMILY)		2	2	8.0	8. to 8.	0.003
THERAGRA CHALCOGRAMMA		29	29	6.3	3. to 10.	0.021
ANOPLARCHUS PURPURESCENS		19	19	21.4	15. to 27.	0.313
COTTIDAE (FAMILY)		25	25	8.2	5. to 11.	0.068
AGONIDAE (FAMILY)		1	1	14.0	14. to 14.	0.014
CYCLOPTERIDAE (FAMILY)		2	2	8.5	8. to 9.	0.007
HEMILEPIDOTUS HEMILEPIDOTUS		2	2	10.0	8. to 12.	0.035

Location : SANDHEADS
Stn. code: 690112

Lat: 49 deg. 5.5 min. N
Long: 123 deg. 19.0 min. W

Date: 4/16/1969

Time set: 1325 Duration: 15. min.

Heading : degrees

Tow number : 12
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		90	90	13.5	8. to 20.	0.129
HEXAGRAMMOS STELLERI		1	1	60.0	60. to 60.	1.550
GASTEROSTEUS ACULEATUS		4	4	64.5	60. to 69.	10.580
ONCORHYNCHUS KETA		8	8	36.1	32. to 39.	2.280
CRYPTACANTHODES ALEUTENSIS		3	3	19.3	18. to 20.	0.057
AGONIDAE (FAMILY)		1	1	10.0	10. to 10.	0.008
LEUROGLOSSUS SCHMIDTI		4	2	12.0	11. to 13.	0.007
PSYCHROLUTES SIGALUTES		2	2	16.5	16. to 17.	0.115
AGONOPSIS VULSA		2	2	10.0	9. to 11.	0.016
AMMODYTES HEXAPTERUS		56	28	16.4	11. to 24.	0.187
LUMPENUS SAGITTA		64	32	32.3	12. to 40.	1.560
ANOPLARCHUS PURPURESCENS		32	16	18.2	14. to 24.	0.153
THERAGRA CHALCOGRAMMA		5616	50	5.7	4. to 8.	0.703

Location : SEWER OUTFALL
Stn. code: 690113

Lat: 49 deg. 12.0 min. N
Long: 123 deg. 19.0 min. W

Date: 4/17/1969

Time set: 0840 Duration: 15. min.

Heading : degrees

Tow number : 13
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		56	56	13.1	7. to 20.	0.116
HYPOMESUS PRETIOSUS		1	1	57.0	57. to 57.	0.880
THALEICHTHYS PACIFICUS		1	1	56.0	56. to 56.	0.500
HEXAGRAMMOS STELLERI		3	3	55.3	53. to 58.	3.690
GASTEROSTEUS ACULEATUS	T1	2	2	40.5	38. to 43.	1.080
GASTEROSTEUS ACULEATUS	T2	7	7	62.4	57. to 69.	17.020
ONCORHYNCHUS KETA		34	34	40.3	35. to 53.	17.130
ANOPLARCHUS PURPURESCENS		8	8	20.6	10. to 32.	0.162
LEUROGLOSSUS SCHMIDTI		4	4	9.5	8. to 11.	0.004
COTTIDAE (FAMILY)		2	2	10.0	10. to 10.	0.016
CRYPTACANTHODES ALEUTENSIS		6	6	10.0	7. to 14.	0.028
PSYCHROLUTES SIGALUTES		5	5	16.0	10. to 18.	0.415
LUMPENUS SAGITTA		34	34	31.9	22. to 43.	1.910
AMMODYTES HEXAPTERUS		161	35	23.6	13. to 30.	2.765
THERAGRA CHALCOGRAMMA		6512	50	6.6	5. to 14.	0.650

Location : NORTH ARM-FRASER
Stn. code: 690114

Lat: 49 deg. 15.5 min. N
Long: 123 deg. 18.0 min. W

Date: 4/17/1969

Time set: 0805 Duration: 15. min.

Heading : degrees

Tow number : 14
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		138	138	13.8	7. to 21.	0.300
GASTEROSTEUS ACULEATUS		4	4	61.3	60. to 64.	8.640
HEXAGRAMMOS STELLERI		1	1	61.0	61. to 61.	1.610
ONCORHYNCHUS KETA		93	89	41.0	36. to 61.	41.750
THERAGRA CHALCOGRAMMA		630	50	6.1	4. to 11.	0.354
AMMODYTES HEXAPTERUS		424	100	18.3	6. to 33.	2.464
CRYPTACANTHODES ALEUTENSIS		16	16	15.1	6. to 25.	0.215
COTTIDAE (FAMILY)		11	11	5.9	5. to 9.	0.010
LUMPENUS SAGITTA		23	23	36.4	25. to 46.	1.845
ANOPLARCHUS PURPURESCENS		18	18	17.9	8. to 23.	0.155

Location : SPANISH BANKS BUOY
Stn. code: 690115

Lat: 49 deg. 17.5 min. N
Long: 123 deg. 17.0 min. W

Date: 4/17/1969

Time set: 0720 Duration: 15. min.

Heading : degrees

Tow number : 15
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		9	9	17.8	11. to 21.	0.032
HYPOMESUS PRETIOSUS		2	2	137.5	137. to 138.	39.800
GASTEROSTEUS ACULEATUS	T1	3	3	45.0	43. to 49.	2.150
GASTEROSTEUS ACULEATUS	T2	6	6	62.5	59. to 66.	14.040
ONCORHYNCHUS KETA		2	2	44.0	42. to 46.	1.030
THERAGRA CHALCOGRAMMA		114	25	5.6	4. to 7.	0.070
CRYPTACANTHODES ALEUTENSIS		8	8	21.8	13. to 29.	0.293
AMMODYTES HEXAPTERUS		111	30	22.4	10. to 33.	1.544
PSYCHROLUTES SIGALUTES	L	4	4	6.3	5. to 8.	0.012
PSYCHROLUTES SIGALUTES	PL	1	1	20.0	20. to 20.	0.105
LUMPENUS SAGITTA		15	15	34.2	21. to 41.	0.796

Location : 5 MI OFF POINT GREY
Stn. code: 690116

Lat: 49 deg. 17.0 min. N
Long: 123 deg. 23.0 min. W

Date: 4/17/1969

Time set: 0930 Duration: 15. min.

Heading : degrees

Tow number : 16
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		132	132	14.2	7. to 21.	0.304
ONCORHYNCHUS KETA		140	140	38.6	33. to 50.	55.070
GASTEROSTEUS ACULEATUS	T1	5	5	42.0	33. to 50.	3.160
GASTEROSTEUS ACULEATUS	T2	19	19	63.4	57. to 68.	46.880
HEXAGRAMMOS STELLERI		9	9	52.0	42. to 58.	8.700
AMMODYTES HEXAPTERUS		928	0			
THERAGRA CHALCOGRAMMA		684	0			
LUMPENUS SAGITTA		46	23	34.6	19. to 42.	1.629
CRYPTACANTHODES ALEUTENSIS		70	3	17.3	14. to 23.	0.037
ANOPLARCHUS PURPURESCENS		110	5	19.8	13. to 27.	0.083
LEUROGLOSSUS SCHMIDTI		50	2	7.0	5. to 9.	0.001
PLEURONECTIDAE (FAMILY)		130	6	5.5	4. to 7.	0.005
COTTIDAE (FAMILY)		50	2	7.5	5. to 10.	0.005
PSYCHROLUTES SIGALUTES		30	1	10.0	10. to 10.	0.004
CHIROLOPHIS DECORATUS		70	3	31.3	30. to 32.	0.300

Location : 5 MI OFF SANDHEADS
Stn. code: 690117

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 24.0 min. W

Date: 4/17/1969

Time set: 1045 Duration: 15. min.

Heading : degrees

Tow number : 17
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		140	140	12.9	8. to 22.	0.243
ONCORHYNCHUS KETA		164	164	37.3	33. to 49.	57.080
ONCORHYNCHUS TSHAWYTSCHA		2	2	43.5	39. to 48.	1.540
HYPOMESUS PRETIOSUS		1	1	46.0	46. to 46.	0.420
GASTEROSTEUS ACULEATUS		5	5	61.6	57. to 65.	11.510
HEXAGRAMMOS STELLERI		3	3	55.3	54. to 58.	3.450
ODONTOPYXIS TRISPINOSA		1	1	39.0	39. to 39.	0.180
PSYCHROLUTES SIGALUTES		2	2	44.0	43. to 45.	4.140
		1	1	6.0	6. to 6.	0.016
THERAGRA CHALCOGRAMMA		1128	0			
ANOPLARCHUS PURPURESCENS		20	5	21.0	17. to 25.	0.079
LUMPENUS SAGITTA		56	14	34.6	23. to 41.	0.850
AMMODYTES HEXAPTERUS		204	51	20.3	5. to 30.	0.620
COTTIDAE (FAMILY)		8	2	5.5	5. to 6.	0.003
LEUROGLOSSUS SCHMIDTI		4	1	13.0	13. to 13.	0.004
AGONOPSIS VULSA		4	1	13.0	13. to 13.	0.008
PLEURONECTIDAE (FAMILY)		16	4	5.5	5. to 6.	0.007
		4	1	5.0	5. to 5.	0.002

Location : 5 MI OFF PORLIER PASS
Stn. code: 690118

Lat: 49 deg. 3.0 min. N
Long: 123 deg. 30.0 min. W

Date: 4/17/1969

Time set: 1135 Duration: 15. min.

Heading : degrees

Tow number : 18
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		11	11	15.1	9. to 19.	0.020
THERAGRA CHALCOGRAMMA		25	25	5.8	4. to 9.	0.016
AMMODYTES HEXAPTERUS		27	27	19.3	8. to 35.	0.306
LUMPENUS SAGITTA		8	8	31.1	23. to 44.	0.317
ANOPLARCHUS PURPURESCENS		3	3	14.7	12. to 19.	0.013
PLEURONECTIDAE (FAMILY)		1	1	8.0	8. to 8.	0.002
COTTIDAE (FAMILY)		2	2	3.0	3. to 3.	0.001

Location : ABOVE PORLIER PASS
Stn. code: 690119

Lat: 49 deg. 1.5 min. N
Long: 123 deg. 34.5 min. W

Date: 4/17/1969

Time set: 1220 Duration: 15. min.

Heading : degrees

Tow number : 19
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ONCORHYNCHUS GORBUSCHA		1	1	50.0	50. to 50.	0.740
HEXAGRAMMOS STELLERI		1	1	48.0	48. to 48.	0.610
GASTEROSTEUS ACULEATUS	T1	1	1	50.0	50. to 50.	1.110
GASTEROSTEUS ACULEATUS	T2	7	7	65.1	62. to 72.	16.150
ANOPLARCHUS PURPURESCENS		1	1	10.0	10. to 10.	0.002
THERAGRA CHALCOGRAMMA		23	23	5.2	4. to 10.	0.010
COTTIDAE (FAMILY)		4	4	5.3	4. to 8.	0.003
AMMODYTES HEXAPTERUS		9	9	12.1	10. to 19.	0.031

Location : BELOW PORLIER PASS
Stn. code: 690120

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 33.0 min. W

Date: 4/17/1969

Time set: 1300 Duration: 15. min.

Heading : degrees

Tow number : 20
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1	1	17.0	17. to 17.	0.003
THERAGRA CHALCOGRAMMA		35	35	6.1	3. to 13.	0.059
AMMODYTES HEXAPTERUS		2	2	17.5	13. to 22.	0.017
PLEURONECTIDAE (FAMILY)		4	4	4.5	4. to 5.	0.002
CRYPTACANTHODES ALEUTENSIS		2	2	14.0	10. to 18.	0.023
LUMPENUS SAGITTA		2	2	34.5	32. to 37.	0.104

Location : THRASHER ROCK
Stn. code: 690121

Lat: 49 deg. 9.0 min. N
Long: 123 deg. 36.0 min. W

Date: 4/23/1969

Time set: 1300 Duration: 15. min.

Heading : degrees

Tow number : 21
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		67	67	16.6	11. to 22.	0.249
LUMPENUS SAGITTA		4	4	18.3	7. to 27.	0.060
CHIROLOPHIS DECORATUS		1	1	24.0	24. to 24.	0.041
THERAGRA CHALCOGRAMMA		91	91	7.9	4. to 20.	0.331
AMMODYTES HEXAPTERUS		159	25	19.4	10. to 32.	1.833
CRYPTACANTHODES ALEUTENSIS		8	8	16.0	12. to 21.	0.106
OPHIODON ELONGATUS		1	1	16.0	16. to 16.	0.015
COTTIDAE (FAMILY)		4	4	4.8	4. to 5.	0.002
HEMILEPIDOTUS HEMILEPIDOTUS		2	2	13.5	8. to 19.	0.086
ONCORHYNCHUS KETA		5	5	37.8	35. to 40.	1.750
ONCORHYNCHUS NERKA		1	1	90.0	90. to 90.	5.410
GASTEROSTEUS ACULEATUS		2	2	44.0	39. to 49.	1.440

Location : VALDES IS
Stn. code: 690122

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 37.0 min. W

Date: 4/17/1969

Time set: 1400 Duration: 15. min.

Heading : degrees

Tow number : 22
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THERAGRA CHALCOGRAMMA		43	43	6.4	4. to 12.	0.046
AMMODYTES HEXAPTERUS		4	4	30.0	29. to 31.	0.118
COTTIDAE (FAMILY)		11	11	4.8	4. to 6.	0.002
GADIDAE (FAMILY)		1	1	10.0	10. to 10.	0.002

Location : GALIANO IS
Stn. code: 690123

Lat: 48 deg. 57.0 min. N
Long: 123 deg. 26.0 min. W

Date: 4/23/1969

Time set: 1440 Duration: 15. min.

Heading : degrees

Tow number : 23
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		40	20	15.3	11. to 20.	0.055
ONCORHYNCHUS KETA		2	1	38.0	38. to 38.	0.270
GASTEROSTEUS ACULEATUS		2	1	64.0	64. to 64.	2.730
HEXAGRAMMOS STELLERI		2	1	38.0	38. to 38.	0.220
THERAGRA CHALCOGRAMMA		280	40	6.7	5. to 12.	0.194
AMMODYTES HEXAPTERUS		140	25	17.8	9. to 34.	0.813
ANOPLARCHUS PURPURESCENS		4	2	21.5	15. to 28.	0.028
COTTIDAE (FAMILY)		2	1	4.0	4. to 4.	0.001
SCORPAENICHTHYS MARMORATUS		2	1	7.0	7. to 7.	0.001
OPHIODON ELONGATUS		16	8	14.1	11. to 18.	0.083
CRYPTACANTHODES ALEUTENSIS		22	11	14.1	13. to 17.	0.133

Location : MID STRAIT OFF GALIANO IS
Stn. code: 690124

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 20.0 min. W

Date: 4/23/1969

Time set: 1517 Duration: 15. min.

Heading : degrees

Tow number : 24
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		2	2	13.0	12. to 14.	0.003
ONCORHYNCHUS KETA		1	1	42.0	42. to 42.	0.470
GASTEROSTEUS ACULEATUS	T1	1	1	39.0	39. to 39.	0.430
GASTEROSTEUS ACULEATUS	T2	2	2	62.0	60. to 64.	4.780
THERAGRA CHALCOGRAMMA		51	51	6.9	4. to 18.	0.104
AMMODYTES HEXAPTERUS		29	29	20.5	13. to 35.	0.380
CRYPTACANTHODES ALEUTENSIS		4	4	11.5	6. to 14.	0.020
LUMPENUS SAGITTA		5	5	15.0	6. to 26.	0.041
COTTIDAE (FAMILY)		5	5	5.0	5. to 5.	0.002

Location : OFF SALAMANCA PT
Stn. code: 690125

Lat: 48 deg. 55.0 min. N
Long: 123 deg. 20.0 min. W

Date: 4/16/1969

Time set: 0715 Duration: 15. min.

Heading : degrees

Tow number : 25
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
GASTEROSTEUS ACULEATUS		1	1	54.0	54. to 54.	1.340
AMMODYTES HEXAPTERUS		115	25	17.9	8. to 32.	0.950
THERAGRA CHALCOGRAMMA		13	13	5.4	4. to 8.	0.013
COTTIDAE (FAMILY)		13	13	4.3	3. to 6.	0.003
CRYPTACANTHODES ALEUTENSIS		6	6	16.2	12. to 25.	0.068
PSYCHROLUTES SIGALUTES		1	1	10.0	10. to 10.	0.012
AGONIDAE (FAMILY)		3	3	9.0	7. to 13.	0.010
OPHIODON ELONGATUS		21	21	8.6	6. to 11.	0.060
LUMPENUS SAGITTA		6	6	10.2	7. to 15.	0.012
ANOPLARCHUS PURPURESCENS		1	1	18.0	18. to 18.	0.009
CHIROLOPHIS DECORATUS		1	1	15.0	15. to 15.	0.009
LEUROGLOSSUS SCHMIDTI		1	1	8.0	8. to 8.	0.001

Location : ACTIVE PASS-WEST
Stn. code: 690201

Lat: 48 deg. 51.5 min. N
Long: 123 deg. 20.5 min. W

Date: 6/16/1969

Time set: 1730 Duration: 15. min.

Heading : degrees

Tow number : 1
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	72	25	14.8	12. to 18.	0.300
CLUPEA PALLASII	J	35	35	141.7	114. to 250.	1111.000
ENGRAULIS MORDAX MORDAX	T1	1	1	18.0	18. to 18.	0.010
ENGRAULIS MORDAX MORDAX	T2	1	1	119.0	119. to 119.	13.940
THALEICHTHYS PACIFICUS		23	23	13.5	8. to 17.	0.050
COTTIDAE (FAMILY)		2	2	7.5	7. to 8.	0.002
GASTEROSTEUS ACULEATUS		1	1	45.0	45. to 45.	0.820
ONCORHYNCHUS KETA		73	73	83.1	60. to 129.	406.600
ONCORHYNCHUS KISUTCH		2	2	111.0	86. to 136.	27.050
ONCORHYNCHUS NERKA		4	4	107.5	103. to 116.	46.410

Location : ACTIVE PASS-EAST
Stn. code: 690202

Lat: 48 deg. 51.0 min. N
Long: 123 deg. 18.0 min. W

Date: 6/16/1969

Time set: 1815 Duration: 15. min.

Heading : degrees

Tow number : 2
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	73	25	17.5	10. to 23.	0.480
CLUPEA PALLASII	J	10	10	125.3	109. to 144.	191.190
ENGRAULIS MORDAX MORDAX	T1	4	4	12.5	10. to 16.	0.018
ENGRAULIS MORDAX MORDAX	T2	1	1	84.0	84. to 84.	3.740
ONCORHYNCHUS KETA		52	52	82.3	56. to 126.	276.500
ONCORHYNCHUS KISUTCH		2	2	124.0	112. to 136.	38.170
ONCORHYNCHUS NERKA		3	3	100.0	100. to 100.	28.500
COTTIDAE (FAMILY)		1	1	11.0	11. to 11.	
GOBIIDAE (FAMILY)		1	1	6.0	6. to 6.	
CYCLOPTERIDAE (FAMILY)		1	1	4.0	4. to 4.	
SEBASTODES Type 2		9	9	4.9	4. to 6.	
CITHARICHTHYS SORDIDUS		1	1	15.0	15. to 15.	

Location : OFF ACTIVE PASS
Stn. code: 690203

Lat: 48 deg. 53.0 min. N
Long: 123 deg. 17.0 min. W

Date: 6/16/1969

Time set: 1900 Duration: 15. min.

Heading : degrees

Tow number : 3
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	345	25	21.1	17. to 25.	5.500
CLUPEA PALLASII	J	4	4	118.5	103. to 128.	66.560
LAMPETRA AYRESI		4	4	99.5	92. to 110.	4.870
ENGRAULIS MORDAX MORDAX		15	15	18.2	12. to 22.	0.170
THALEICHTHYS PACIFICUS		1	1	8.0	8. to 8.	0.001
PLATICHTHYS STELLATUS		1	1	11.0	11. to 11.	0.003
ONCORHYNCHUS GORBUSCHA		1	1	78.0	78. to 78.	4.240
ONCORHYNCHUS KETA	T1	1	1	39.0	39. to 39.	0.500
ONCORHYNCHUS KETA	T2	88	88	89.5	61. to 127.	663.500
ONCORHYNCHUS KISUTCH		4	4	108.3	106. to 112.	53.550
ONCORHYNCHUS NERKA		1	1	100.0	100. to 100.	10.590
ONCORHYNCHUS TSHAWYTSCHA		3	3	84.3	75. to 90.	22.160
ONCORHYNCHUS MYKISS		1	1	170.0	170. to 170.	41.620

Location : BELLE CHAIN ISLETS
Stn. code: 690204

Lat: 48 deg. 50.0 min. N
Long: 123 deg. 11.0 min. W

Date: 6/16/1969

Time set: 1950 Duration: 15. min.

Heading : degrees

Tow number : 4
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		98	25	20.8	18. to 24.	1.560
ENGRAULIS MORDAX MORDAX		4	4	17.3	16. to 18.	0.030
PLEURONECTIDAE (FAMILY)		1	1	11.0	11. to 11.	0.004
LAMPETRA AYRESI		4	4	130.5	105. to 158.	11.110
ONCORHYNCHUS KETA		7	7	94.1	75. to 119.	63.870

Location : 4 MI OFF ACTIVE PASS
Stn. code: 690205

Lat: 48 deg. 54.0 min. N
Long: 123 deg. 12.0 min. W

Date: 6/17/1969

Time set: 0515 Duration: 15. min.

Heading : degrees

Tow number : 5
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		9016	25	19.8	17. to 23.	13.570
THALEICHTHYS PACIFICUS		17	17	11.6	5. to 18.	0.300
GLYPTOCEPHALUS ZACHIRUS		2	2	13.0	7. to 19.	0.111
LAMPETRA AYRESI		7	7	120.3	94. to 159.	16.390
ONCORHYNCHUS KETA		10	10	85.6	73. to 103.	63.690
ONCORHYNCHUS KISUTCH		2	2	123.5	100. to 147.	46.390
ONCORHYNCHUS NERKA	T1	1	1	40.0	40. to 40.	0.390
ONCORHYNCHUS NERKA	T2	2	2	104.5	102. to 107.	23.150

Location : 4 MI OFF POINT ROBERTS
Stn. code: 690206

Lat: 48 deg. 56.0 min. N
Long: 123 deg. 9.0 min. W

Date: 6/17/1969

Time set: 0610 Duration: 15. min.

Heading : degrees

Tow number : 6
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
SQUALUS ACANTHIAS		1	1	330.0	330. to 330.	130.000
CLUPEA PALLASII		848	25	19.0	16. to 22.	2.540
ENGRAULIS MORDAX MORDAX		8	2	19.0	18. to 20.	0.029
THALEICHTHYS PACIFICUS		12	3	12.0	9. to 16.	0.010
LAMPETRA AYRESI		4	4	111.0	108. to 116.	7.260
GASTEROSTEUS ACULEATUS		1	1	49.0	49. to 49.	0.700
AMMODYTES HEXAPTERUS		1	1	77.0	77. to 77.	1.790
ONCORHYNCHUS KETA		1	1	111.0	111. to 111.	14.480
ONCORHYNCHUS TSHAWYTSCHA		1	1	111.0	111. to 111.	17.820

Location : POINT ROBERTS
Stn. code: 690207

Lat: 48 deg. 58.0 min. N
Long: 123 deg. 7.0 min. W

Date: 6/17/1969

Time set: 0705 Duration: 15. min.

Heading : degrees

Tow number : 7
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	10	10	17.7	16. to 19.	0.080
CLUPEA PALLASII	J	289	63	138.6	87. to 182.	7930.000
ENGRAULIS MORDAX MORDAX	T1	1	1	17.0	17. to 17.	0.010
ENGRAULIS MORDAX MORDAX	T2	4	4	120.3	101. to 136.	60.660
ONCORHYNCHUS TSHAWYTSCHA		2	2	105.5	103. to 108.	24.100

Location : BOUNDARY BAY BUOY
Stn. code: 690208

Lat: 48 deg. 56.5 min. N
Long: 122 deg. 57.0 min. W

Date: 6/17/1969

Time set: 0745 Duration: 15. min.

Heading : degrees

Tow number : 8
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	9	9	18.9	16. to 21.	0.100
CLUPEA PALLASII	J	119	119			
PLATICHTHYS STELLATUS		1	1	7.0	7. to 7.	0.001
ENGRAULIS MORDAX MORDAX		1	1	112.0	112. to 112.	11.260
ONCORHYNCHUS KETA		25	25	84.6	70. to 110.	152.900
ONCORHYNCHUS KISUTCH		5	5	122.8	113. to 138.	103.250
ONCORHYNCHUS TSHAWYTSCHA		4	4	75.0	65. to 85.	19.390

Location : TSAWWASSEN DOCK
Stn. code: 690209

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 10.0 min. W

Date: 6/17/1969

Time set: 1125 Duration: 10. min.

Heading : degrees

Tow number : 9
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	2	2	20.5	18. to 23.	0.029
CLUPEA PALLASII	J	720	50	129.2	99. to 157.	8000.000
LAMPETRA AYRESI		2	2	141.5	133. to 150.	9.390
GASTEROSTEUS ACULEATUS		1	1	71.0	71. to 71.	4.030
ONCORHYNCHUS TSHAWYTSCHA		2	2	70.0	65. to 75.	7.960
PARALICHTHYIDAE (FAMILY)		25	25	6.0	5. to 7.	0.023
GOBIIDAE (FAMILY)		414	0			

Location : CANOE PASS BUOY
Stn. code: 690210

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 15.0 min. W

Date: 6/17/1969

Time set: 1230 Duration: 10. min.

Heading : degrees

Tow number : 10
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	2	2	21.5	19. to 24.	0.020
CLUPEA PALLASII	J	10	10	48.4	46. to 51.	9.050
CLUPEA PALLASII	AD	5	5	105.8	95. to 122.	58.490
CLUPEA PALLASII		600	0			
HYPOMESUS PRETIOSUS		2	2	91.0	83. to 99.	12.800
PSYCHROLUTES SIGALUTES		1	1	34.0	34. to 34.	1.330
LAMPETRA AYRESI		6	6	112.0	89. to 140.	15.660
AMMODYTES HEXAPTERUS		1	1	130.0	130. to 130.	9.780
GASTEROSTEUS ACULEATUS		3	3	57.3	53. to 60.	6.030
ONCORHYNCHUS NERKA		1	1	38.0	38. to 38.	0.390
ONCORHYNCHUS TSHAWYTSCHA		4	4	81.0	71. to 97.	26.600

Location : KNUCKLE BUOY
Stn. code: 690211

Lat: 49 deg. 4.0 min. N
Long: 123 deg. 19.0 min. W

Date: 6/17/1969

Time set: 1315 Duration: 10. min.

Heading : degrees

Tow number : 11
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	1	1	17.0	17. to 17.	0.055
CLUPEA PALLASII	J	2	2	59.0	58. to 60.	2.860
LAMPETRA AYRESI		6	6	102.3	87. to 120.	9.400
ONCORHYNCHUS TSHAWYTSCHA		3	3	69.3	49. to 104.	17.440

Location : SANDHEADS
Stn. code: 690212

Lat: 49 deg. 5.5 min. N
Long: 123 deg. 19.0 min. W

Date: 6/17/1969

Time set: 1355 Duration: 10. min.

Heading : degrees

Tow number : 12
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	44	25	18.4	15. to 22.	0.380
CLUPEA PALLASII	J	19	19	121.7	107. to 180.	355.090
LAMPETRA AYRESI		12	12	116.9	85. to 180.	30.910
GASTEROSTEUS ACULEATUS		1	1	53.0	53. to 53.	1.550
AMMODYTES HEXAPTERUS		1	1	73.0	73. to 73.	1.280
ONCORHYNCHUS KETA		1	1	85.0	85. to 85.	4.790
ONCORHYNCHUS TSHAWYTSCHA		2	2	109.5	7. to 142.	38.430
ENGRAULIS MORDAX MORDAX		6	6	13.2	12. to 16.	0.020
RHINOGOBIOPS NICHOLSI		3	3	4.7	4. to 5.	0.002
PARALICHTHYIDAE (FAMILY)		5	5	6.8	6. to 7.	0.003
THALEICHTHYS PACIFICUS		19	19	8.2	6. to 12.	0.018

Location : SEWER OUTFALL
Stn. code: 690213

Lat: 49 deg. 12.0 min. N
Long: 123 deg. 19.0 min. W

Date: 6/17/1969

Time set: 1445 Duration: 10. min.

Heading : degrees

Tow number : 13
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	11	11	20.5	14. to 24.	0.150
CLUPEA PALLASII	J	379	100	59.0	43. to 69.	175.600
CLUPEA PALLASII	AD	51	51	119.5	84. to 152.	850.000
PARALICHTHYIDAE (FAMILY)		6	6	7.0	6. to 8.	0.006
RHINOGOBIOPS NICHOLSI		1	1	9.0	9. to 9.	0.005
LAMPETRA AYRESI		13	13	115.9	98. to 148.	2307.000
GASTEROSTEUS ACULEATUS		24	24	52.8	42. to 59.	36.960
AMMODYTES HEXAPTERUS		1	1	69.0	69. to 69.	1.220
HYPOMESUS PRETIOSUS		4	4	89.5	82. to 95.	23.510
ONCORHYNCHUS TSHAWYTSCHA		5	5	78.2	64. to 105.	28.430

Location : POINT GREY
Stn. code: 690214

Lat: 49 deg. 15.5 min. N
Long: 123 deg. 18.0 min. W

Date: 6/17/1969

Time set: 1525 Duration: 10. min.

Heading : degrees

Tow number : 14
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	75	25	21.7	18. to 27.	1.560
CLUPEA PALLASII	J	2	2	58.0	54. to 62.	3.150
CLUPEA PALLASII	AD	22	22	120.5	109. to 139.	392.000
LAMPETRA AYRESI		18	18	111.3	93. to 138.	34.320
HYPOMESUS PRETIOSUS	T1	2	2	81.5	73. to 90.	9.270
HYPOMESUS PRETIOSUS	T2	1	1	152.0	152. to 152.	33.470
AMMODYTES HEXAPTERUS		1	1	68.0	68. to 68.	1.030
GASTEROSTEUS ACULEATUS		6	6	52.0	48. to 58.	8.820
ONCORHYNCHUS KETA		2	2	71.0	67. to 75.	6.510
ONCORHYNCHUS TSHAWYTSCHA		4	4	72.8	69. to 81.	17.130

Location : SPANISH BANKS BUOY
Stn. code: 690215

Lat: 49 deg. 17.5 min. N
Long: 123 deg. 17.0 min. W

Date: 6/17/1969

Time set: 1610 Duration: 10. min.

Heading : degrees

Tow number : 15
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	291	25	21.4	17. to 28.	5.070
CLUPEA PALLASII	J	20	20	65.2	57. to 72.	50.380
CLUPEA PALLASII	AD	17	17	102.7	87. to 126.	194.870
ENGRAULIS MORDAX MORDAX		6	6	17.0	12. to 22.	0.059
RHINOGOBIOPS NICHOLSI		3	3	8.0	7. to 9.	0.006
PLATICHTHYS STELLATUS		1	1	11.0	11. to 11.	0.010
LAMPETRA AYRESI		2	2	115.5	115. to 116.	3.410
HYPOMESUS PRETIOSUS		4	4	89.3	84. to 96.	25.510
ONCORHYNCHUS KETA		8	8	60.3	39. to 73.	17.730
ONCORHYNCHUS KISUTCH		1	1	187.0	187. to 187.	77.290
ONCORHYNCHUS TSHAWYTSCHA		2	2	68.5	66. to 71.	6.860
GASTEROSTEUS ACULEATUS		26	26	59.3	50. to 66.	66.930

Location : 5 MI OFF POINT GREY
Stn. code: 690216

Lat: 49 deg. 17.0 min. N
Long: 123 deg. 23.0 min. W

Date: 6/18/1969

Time set: 0610 Duration: 10. min.

Heading : degrees

Tow number : 16
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	5184	25	19.8	16. to 22.	8.480
ENGRAULIS MORDAX MORDAX		16	2	19.5	19. to 20.	0.030
LAMPETRA AYRESI		9	9	138.0	111. to 175.	35.590
CLUPEA PALLASII	J	1	1	123.0	123. to 123.	20.190
GASTEROSTEUS ACULEATUS		3	3	62.0	58. to 68.	7.370
AMMODYTES HEXAPTERUS		2	2	65.0	53. to 77.	3.780
ONCORHYNCHUS KETA		3	3	83.3	77. to 88.	17.240
ONCORHYNCHUS KISUTCH		1	1	123.0	123. to 123.	22.120

Location : 5 MI OFF SANDHEADS
Stn. code: 690217

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 24.0 min. W

Date: 6/18/1969

Time set: 0730 Duration: 10. min.

Heading : degrees

Tow number : 17
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	568	50	21.0	17. to 25.	1.846
CLUPEA PALLASII	J	2	2	178.5	176. to 181.	150.000
ENGRAULIS MORDAX MORDAX		144	5	15.2	11. to 23.	0.039
SEBASTODES Type 2		8	1	9.0	9. to 9.	0.005
LAMPETRA AYRESI		2	2	126.5	109. to 144.	5.550
GASTEROSTEUS ACULEATUS		1	1	59.0	59. to 59.	2.120
ONCORHYNCHUS KETA	T1	1	1	38.0	38. to 38.	0.380
ONCORHYNCHUS KETA	T2	3	3	94.3	82. to 111.	25.330
ONCORHYNCHUS NERKA		11	11	91.7	78. to 110.	88.420
ONCORHYNCHUS TSHAWYTSCHA		1	1	193.0	193. to 193.	80.000

Location : 5 MI OFF PORLIER PASS
Stn. code: 690218

Lat: 49 deg. 3.0 min. N
Long: 123 deg. 30.0 min. W

Date: 6/18/1969

Time set: 0840 Duration: 10. min.

Heading : degrees

Tow number : 18
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		412	25	19.1	14. to 30.	1.510
ENGRAULIS MORDAX MORDAX		28	7	19.9	16. to 23.	0.100
ONCORHYNCHUS KETA		2	2	75.0	60. to 90.	9.070
ONCORHYNCHUS KISUTCH		1	1	156.0	156. to 156.	50.200
AMMODYTES HEXAPTERUS		1	1	74.0	74. to 74.	1.510

Location : ABOVE PORLIER PASS
Stn. code: 690219

Lat: 49 deg. 1.5 min. N
Long: 123 deg. 34.5 min. W

Date: 6/18/1969

Time set: 0920 Duration: 10. min.

Heading : degrees

Tow number : 19
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		29	29	18.5	15. to 24.	0.320

Location : BELOW PORLIER PASS
Stn. code: 690220

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 33.0 min. W

Date: 6/18/1969

Time set: 0950 Duration: 10. min.

Heading : degrees

Tow number : 20
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
THALEICHTHYS PACIFICUS		1	1	7.0	7. to 7.	0.001
SEBASTODES Type 2		9	9	5.6	5. to 6.	0.011
RHINOGOBIOPS NICHOLSI		3	3	6.3	6. to 7.	0.002
CLUPEA PALLASII		17	17	20.0	15. to 26.	0.308
ONCORHYNCHUS KETA		5	5	75.6	71. to 80.	21.860

Location : VALDES IS
Stn. code: 690221

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 37.0 min. W

Date: 6/18/1969

Time set: 1040 Duration: 10. min.

Heading : degrees

Tow number : 21
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
SEBASTES CAURINUS		1	1	23.0	23. to 23.	0.160
CLUPEA PALLASII		1	1	16.0	16. to 16.	
ONCORHYNCHUS KETA		14	14	69.6	55. to 83.	46.770

Location : THRASHER ROCK
Stn. code: 690222

Lat: 49 deg. 9.0 min. N
Long: 123 deg. 36.0 min. W

Date: 6/18/1969

Time set: 1140 Duration: 10. min.

Heading : degrees

Tow number : 22
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3	3	19.0	18. to 20.	0.030
SEBASTODES Type 2		8	8	4.8	4. to 5.	0.010
ONCORHYNCHUS KETA		1	1	73.0	73. to 73.	3.700

Location : MID GALIANO IS
Stn. code: 690223

Lat: 48 deg. 57.0 min. N
Long: 123 deg. 26.0 min. W

Date: 6/19/1969

Time set: 1125 Duration: 10. min.

Heading : degrees

Tow number : 23
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1	1	17.0	17. to 17.	0.010
SEBASTODES Type 2		13	13	5.2	4. to 6.	0.027
ONCORHYNCHUS KETA		2	2	68.5	65. to 72.	5.780

Location : SALAMANCA PT
Stn. code: 690224

Lat: 48 deg. 55.0 min. N
Long: 123 deg. 20.0 min. W

Date: 6/19/1969

Time set: 1220 Duration: 10. min.

Heading : degrees

Tow number : 24
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1	1	19.0	19. to 19.	0.010
SCORPAENICHTHYS MARMORATUS		1	1	7.0	7. to 7.	0.001
SEBASTODES Type 2		10	10	4.8	4. to 8.	0.011
ONCORHYNCHUS KETA		4	4	101.8	98. to 110.	40.380
ONCORHYNCHUS KISUTCH		1	1	141.0	141. to 141.	33.880

Location : 5 MI OFF SALAMANCA PT
Stn. code: 690225

Lat: 48 deg. 58.0 min. N
Long: 123 deg. 17.0 min. W

Date: 6/19/1969

Time set: 1310 Duration: 10. min.

Heading : degrees

Tow number : 25
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		452	25	22.0	12. to 27.	9.100
SEBASTODES Type 2		3	3	5.3	4. to 6.	0.002
ATHERESTHES STOMIAS		1	1	8.0	8. to 8.	0.001

Location : 5 MI OFF MID GALIANO IS
Stn. code: 690226

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 24.0 min. W

Date: 6/19/1969

Time set: 1350 Duration: 10. min.

Heading : degrees

Tow number : 26
Cruise : 2

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		356	50	21.7	18. to 26.	6.900

Location : ACTIVE PASS-WEST
Stn. code: 690301

Lat: 48 deg. 51.5 min. N
Long: 123 deg. 20.5 min. W

Date: 7/15/1969

Time set: 1125 Duration: 15. min.

Heading : degrees

Tow number : 1
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	9	2	25.5	25. to 26.	0.068
CLUPEA PALLASII	J	24	5	83.0	76. to 90.	27.050
LAMPETRA AYRESI		4	1	187.0	187. to 187.	7.520
GASTEROSTEUS ACULEATUS		4	1	63.0	63. to 63.	2.770
ONCORHYNCHUS KETA		700	175	98.1	75. to 131.	1669.000
RHINOGOBIOPS NICHOLSI		4	1	10.0	10. to 10.	0.010

Location : ACTIVE PASS-EAST
Stn. code: 690302

Lat: 48 deg. 51.0 min. N
Long: 123 deg. 18.0 min. W

Date: 7/15/1969

Time set: 1210 Duration: 15. min.

Heading : degrees

Tow number : 2
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		2	2	23.5	21. to 26.	0.060
ENGRAULIS MORDAX MORDAX		4	4	25.0	19. to 31.	0.159
ONCORHYNCHUS KETA		7	7	92.7	67. to 108.	58.310
GASTEROSTEUS ACULEATUS		1	1	64.0	64. to 64.	1.910

Location : OFF ACTIVE PASS
Stn. code: 690303

Lat: 48 deg. 53.0 min. N
Long: 123 deg. 17.0 min. W

Date: 7/15/1969

Time set: 1245 Duration: 15. min.

Heading : degrees

Tow number : 3
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		3	3	200.3	188. to 208.	35.320
CLUPEA PALLASII	L	9	9	25.4	22. to 29.	0.349
CLUPEA PALLASII	J	1	1	42.0	42. to 42.	0.368
ENGRAULIS MORDAX MORDAX		26	26	27.7	12. to 39.	1.631
ONCORHYNCHUS KETA		9	9	94.4	66. to 125.	82.030
GASTEROSTEUS ACULEATUS		1	1	28.0	28. to 28.	0.150

Location : BELLE CHAIN ISLETS
Stn. code: 690304

Lat: 48 deg. 50.0 min. N
Long: 123 deg. 11.0 min. W

Date: 7/15/1969

Time set: 1340 Duration: 15. min.

Heading : degrees

Tow number : 4
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		1	1	166.0	166. to 166.	5.290
ONCORHYNCHUS KETA		7	7	115.7	90. to 140.	118.870
CLUPEA PALLASII	L	24	24	24.9	15. to 33.	0.987
CLUPEA PALLASII	J	13	13	40.5	37. to 43.	4.803
ENGRAULIS MORDAX MORDAX		25	25	27.0	13. to 38.	1.335

Location : 4 MI OFF ACTIVE PASS
Stn. code: 690305

Lat: 48 deg. 54.0 min. N
Long: 123 deg. 12.0 min. W

Date: 7/15/1969

Time set: 1440 Duration: 15. min.

Heading : degrees

Tow number : 5
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1480	148	27.2	15. to 33.	9.575
ENGRAULIS MORDAX MORDAX		8230	206	26.7	10. to 46.	13.490
LAMPETRA AYRESI		15	15	166.3	116. to 212.	86.370
ONCORHYNCHUS KETA		11	11	101.5	77. to 121.	116.670

Location : 4 MI OFF POINT ROBERTS
Stn. code: 690306

Lat: 48 deg. 56.0 min. N
Long: 123 deg. 9.0 min. W

Date: 7/15/1969

Time set: 1520 Duration: 15. min.

Heading : degrees

Tow number : 6
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	1790	179	28.4	15. to 37.	14.150
CLUPEA PALLASII	J	5	5	42.4	40. to 47.	2.240
ENGRAULIS MORDAX MORDAX		4300	215	30.9	12. to 47.	27.700
LAMPETRA AYRESI		10	10	166.9	128. to 228.	80.020
ONCORHYNCHUS KETA		7	7	105.1	80. to 121.	87.460
ONCORHYNCHUS KISUTCH		2	2	145.0	138. to 152.	90.500
ONCORHYNCHUS TSHAWYTSCHA		1	1	210.0	210. to 210.	150.000

Location : POINT ROBERTS
Stn. code: 690307

Lat: 48 deg. 58.0 min. N
Long: 123 deg. 7.0 min. W

Date: 7/15/1969

Time set: 1625 Duration: 15. min.

Heading : degrees

Tow number : 7
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	342	39	25.4	15. to 29.	1.725
CLUPEA PALLASII	J	1412	161	42.1	32. to 50.	84.300
CLUPEA PALLASII	AD	4	4	86.8	65. to 122.	25.650
CLUPEA PALLASII		1	1	177.0	177. to 177.	70.000
ENGRAULIS MORDAX MORDAX		470	47	30.2	20. to 40.	4.160
LAMPETRA AYRESI		4	4	160.5	139. to 181.	23.340
GASTEROSTEUS ACULEATUS		5	5	73.2	71. to 77.	19.190
ONCORHYNCHUS KETA		32	32	117.8	99. to 172.	557.140
ONCORHYNCHUS KISUTCH		3	3	128.3	121. to 137.	83.500
ONCORHYNCHUS TSHAWYTSCHA	T1	4	4	91.5	85. to 98.	36.780
ONCORHYNCHUS TSHAWYTSCHA	T2	8	8	171.0	153. to 190.	590.000

Location : BOUNDARY BAY
Stn. code: 690308

Lat: 48 deg. 56.5 min. N
Long: 122 deg. 57.0 min. W

Date: 7/15/1969

Time set: 1720 Duration: 15. min.

Heading : degrees

Tow number : 8
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	1050	105	24.7	18. to 31.	3.956
CLUPEA PALLASII	J	150	15	40.3	35. to 48.	5.700
ENGRAULIS MORDAX MORDAX		280	40	23.6	11. to 31.	1.273
LAMPETRA AYRESI		1	1	170.0	170. to 170.	5.680
GASTEROSTEUS ACULEATUS	T1	7	7	28.6	25. to 32.	1.150
GASTEROSTEUS ACULEATUS	T2	3	3	68.7	66. to 71.	9.250
ONCORHYNCHUS KETA		26	26	108.2	97. to 140.	338.600
ONCORHYNCHUS KISUTCH		2	2	120.0	110. to 130.	42.390
ONCORHYNCHUS NERKA		1	1	80.0	80. to 80.	4.340
ONCORHYNCHUS TSHAWYTSCHA	T1	6	6	91.5	72. to 108.	58.830
ONCORHYNCHUS TSHAWYTSCHA	T2	11	11	176.2	152. to 199.	800.000
RONQUILUS JORDANI		2	1	8.0	8. to 8.	0.003
RHINOGOBIOPS NICHOLSI		34	17	6.4	4. to 8.	0.027

Location : TSAWWASSEN DOCK
Stn. code: 690309

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 10.0 min. W

Date: 7/15/1969

Time set: 1825 Duration: 15. min.

Heading : degrees

Tow number : 9
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	1300	50	24.0	15. to 30.	1.660
CLUPEA PALLASII	J	2600	100	38.0	34. to 49.	33.700
CLUPEA PALLASII	AD	1	1	60.0	60. to 60.	1.470
LAMPETRA AYRESI		2	2	200.5	199. to 202.	21.700
ONCORHYNCHUS KETA		8	8	118.4	84. to 146.	149.880

Location : CANOE PASS BUOY
Stn. code: 690310

Lat: 49 deg. 2.0 min. N
Long: 123 deg. 15.0 min. W

Date: 7/15/1969

Time set: 1935 Duration: 15. min.

Heading : degrees

Tow number : 10
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	1090	100	26.1	20. to 34.	4.022
CLUPEA PALLASII	J	610	61	39.7	34. to 47.	22.600
CLUPEA PALLASII	AD	22	22	80.6	62. to 89.	102.500
CLUPEA PALLASII		15	15	125.4	118. to 135.	303.200
ENGRAULIS MORDAX MORDAX		4520	113	30.5	16. to 42.	9.220
LAMPETRA AYRESI		3	3	176.7	158. to 195.	25.000
ONCORHYNCHUS KETA		1	1	114.0	114. to 114.	16.930
ONCORHYNCHUS KISUTCH		2	2	180.0	172. to 188.	165.950
ONCORHYNCHUS NERKA		1	1	101.0	101. to 101.	10.690
AMMODYTES HEXAPTERUS		1	1	82.0	82. to 82.	1.430
RHINOGOBIOPS NICHOLSI		11	11	13.0	9. to 16.	0.117

Location : KNUCKLE BUOY
Stn. code: 690311

Lat: 49 deg. 4.0 min. N
Long: 123 deg. 19.0 min. W

Date: 7/16/1969

Time set: 0520 Duration: 15. min.

Heading : degrees

Tow number : 11
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	15439	100	36.4	24. to 46.	29.200
CLUPEA PALLASII	J	79	16	77.6	67. to 87.	65.600
CLUPEA PALLASII	AD	14	3	119.7	101. to 135.	56.900
ENGRAULIS MORDAX MORDAX		809	0			
LAMPETRA AYRESI		4	1	129.0	129. to 129.	3.380
AMMODYTES HEXAPTERUS		4	1	79.0	79. to 79.	1.560
ONCORHYNCHUS TSHAWYTSCHA		29	6	85.8	72. to 98.	42.840
RHINOGOBIOPS NICHOLSI		19	2	10.0	10. to 10.	0.013

Location : SANDHEADS
Stn. code: 690312

Lat: 49 deg. 5.5 min. N
Long: 123 deg. 19.0 min. W

Date: 7/16/1969

Time set: 0625 Duration: 15. min.

Heading : degrees

Tow number : 12
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	10560	100	38.3	27. to 56.	38.100
CLUPEA PALLASII	J	30	30	76.4	58. to 89.	123.700
LAMPETRA AYRESI		1	1	135.0	135. to 135.	4.220
GASTEROSTEUS ACULEATUS	T2	1	1	65.0	65. to 65.	2.130
AMMODYTES HEXAPTERUS		4	4	83.5	67. to 93.	7.720
ONCORHYNCHUS KETA		2	2	121.0	114. to 128.	50.430
ONCORHYNCHUS TSHAWYTSCHA		7	7	82.1	77. to 88.	41.240
ENGRAULIS MORDAX MORDAX		64	4	18.3	12. to 24.	0.046
GASTEROSTEUS ACULEATUS	T1	64	4	20.3	18. to 22.	0.193

Location : SEWER OUTFALL
Stn. code: 690313

Lat: 49 deg. 12.0 min. N
Long: 123 deg. 19.0 min. W

Date: 7/16/1969

Time set: 0725 Duration: 15. min.

Heading : degrees

Tow number : 13
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	2270	200	35.9	23. to 58.	62.600
CLUPEA PALLASII	J	7	7	64.4	52. to 83.	15.900
CLUPEA PALLASII	AD	1	1	133.0	133. to 133.	26.800
LAMPETRA AYRESI		4	4	163.8	140. to 195.	26.880
GASTEROSTEUS ACULEATUS		1	1	57.0	57. to 57.	2.360
ONCORHYNCHUS KETA		1	1	103.0	103. to 103.	14.180
ONCORHYNCHUS KISUTCH		1	1	160.0	160. to 160.	61.150
ONCORHYNCHUS NERKA		2	2	54.0	52. to 56.	2.780
ONCORHYNCHUS TSHAWYTSCHA	T1	13	13	83.8	72. to 96.	95.870
ONCORHYNCHUS TSHAWYTSCHA	T2	2	2	164.5	156. to 173.	131.970
ENGRAULIS MORDAX MORDAX		289	27	16.4	10. to 27.	0.292
RHINOGOBIOPS NICHOLSI		21	2	10.0	8. to 12.	0.007
THALEICHTHYS PACIFICUS		1	1	28.0	28. to 28.	0.030
PLEURONECTIDAE (FAMILY)		1	1	6.0	6. to 6.	0.001

Location : NORTH ARM-FRASER
Stn. code: 690314

Lat: 49 deg. 15.5 min. N
Long: 123 deg. 18.0 min. W

Date: 7/16/1969

Time set: 0815 Duration: 15. min.

Heading : degrees

Tow number : 14
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	5440	100	38.2	30. to 46.	274.900
CLUPEA PALLASII	J	66	26	80.2	55. to 96.	122.300
CLUPEA PALLASII	AD	9	9	119.6	116. to 124.	160.100
CLUPEA PALLASII		1	1	212.0	212. to 212.	75.000
HYPOMESUS PRETIOSUS		1	1	106.0	106. to 106.	10.070
AMMODYTES HEXAPTERUS		1	1	73.0	73. to 73.	1.230
GASTEROSTEUS ACULEATUS		18	18	64.1	57. to 72.	46.600
ONCORHYNCHUS KETA		2	2	106.0	101. to 111.	24.280
ONCORHYNCHUS TSHAWYTSCHA	T1	10	10	89.7	77. to 113.	93.080
ONCORHYNCHUS TSHAWYTSCHA	T2	11	11	164.3	138. to 201.	713.300

Location : SPANISH BANKS BUOY
Stn. code: 690315

Lat: 49 deg. 17.5 min. N
Long: 123 deg. 17.0 min. W

Date: 7/16/1969

Time set: 0910 Duration: 15. min.

Heading : degrees

Tow number : 15
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	6976	100	40.2	23. to 49.	1034.560
CLUPEA PALLASII	J	1	1	80.0	80. to 80.	4.400
CLUPEA PALLASII	AD	1	1	122.0	122. to 122.	19.500
AMMODYTES HEXAPTERUS		1	1	77.0	77. to 77.	1.430
ONCORHYNCHUS KETA		1	1	90.0	90. to 90.	6.920
ONCORHYNCHUS KISUTCH		2	2	130.0	127. to 133.	63.030
ONCORHYNCHUS TSHAWYTSCHA	T1	7	7	89.9	82. to 110.	61.650
ONCORHYNCHUS TSHAWYTSCHA	T2	2	2	189.5	184. to 195.	180.000

Location : 5 MI OFF POINT GREY
Stn. code: 690316

Lat: 49 deg. 17.0 min. N
Long: 123 deg. 23.0 min. W

Date: 7/16/1969

Time set: 1000 Duration: 12. min.

Heading : degrees

Tow number : 16
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		2576	100	37.3	22. to 50.	34.940
ENGRAULIS MORDAX MORDAX		608	38	30.4	17. to 47.	5.600
LAMPETRA AYRESI		30	30	150.1	110. to 217.	169.790
GASTEROSTEUS ACULEATUS		6	6	60.0	55. to 67.	14.610
ONCORHYNCHUS KETA		4	4	94.5	77. to 105.	35.350
ONCORHYNCHUS MYKISS		1	1	184.0	184. to 184.	92.790

Location : 5 MI OFF SANDHEADS
Stn. code: 690317

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 24.0 min. W

Date: 7/16/1969

Time set: 1130 Duration: 15. min.

Heading : degrees

Tow number : 17
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		39	16	36.6	22. to 45.	4.830
ENGRAULIS MORDAX MORDAX		1569	100	28.4	14. to 37.	6.810
LAMPETRA AYRESI		1	1	178.0	178. to 178.	8.850
ONCORHYNCHUS KETA		6	6	106.2	93. to 118.	79.290

Location : 5 MI OFF PORLIER PASS
Stn. code: 690318

Lat: 49 deg. 3.0 min. N
Long: 123 deg. 30.0 min. W

Date: 7/16/1969

Time set: 1225 Duration: 15. min.

Heading : degrees

Tow number : 18
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
ENGRAULIS MORDAX MORDAX		940	100	27.5	14. to 39.	5.900
ONCORHYNCHUS KETA		2	2	85.0	81. to 89.	11.660

Location : ABOVE PORLIER PASS
Stn. code: 690319

Lat: 49 deg. 1.5 min. N
Long: 123 deg. 34.5 min. W

Date: 7/16/1969

Time set: 1305 Duration: 15. min.

Heading : degrees

Tow number : 19
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		7	7	27.9	27. to 29.	0.500
ENGRAULIS MORDAX MORDAX		71	71	29.4	11. to 38.	5.820
HYPOMESUS PRETIOSUS		1	1	30.0	30. to 30.	0.070
GASTEROSTEUS ACULEATUS		5	5	65.4	60. to 70.	11.630
SYNGNATHUS LEPTORHYNCHUS		2	2	38.0	32. to 44.	0.030
SEBASTES NIGROCINCTUS		1	1	31.0	31. to 31.	0.390

Location : BELOW PORLIER PASS
Stn. code: 690320

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 33.0 min. W

Date: 7/16/1969

Time set: 1345 Duration: 15. min.

Heading : degrees

Tow number : 20
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		2	2	27.0	26. to 28.	0.090
ENGRAULIS MORDAX MORDAX		30	30	25.3	10. to 38.	1.690
ONCORHYNCHUS KETA		3	3	101.7	95. to 114.	33.410
GASTEROSTEUS ACULEATUS	T1	3	3	27.0	21. to 34.	0.500
GASTEROSTEUS ACULEATUS	T2	1	1	65.0	65. to 65.	2.010
SYNGNATHUS LEPTORHYNCHUS		4	4	35.8	22. to 51.	0.060

Location : MID-GALIANO IS
Stn. code: 690321

Lat: 48 deg. 57.0 min. N
Long: 123 deg. 26.0 min. W

Date: 7/16/1969

Time set: 1435 Duration: 15. min.

Heading : degrees

Tow number : 21
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		759	19	31.8	27. to 42.	2.840
ENGRAULIS MORDAX MORDAX		32399	100	32.0	17. to 42.	12.880
ONCORHYNCHUS KETA		5	5	109.8	99. to 123.	86.990

Location : 5 MI OFF SALAMANCA PT
Stn. code: 690323

Lat: 48 deg. 58.0 min. N
Long: 123 deg. 17.0 min. W

Date: 7/16/1969

Time set: 1520 Duration: 15. min.

Heading : degrees

Tow number : 23
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3399	85	30.0	25. to 34.	8.410
ENGRAULIS MORDAX MORDAX		22919	100	31.4	16. to 43.	9.900
LAMPETRA AYRESI		1	1	157.0	157. to 157.	4.680
GASTEROSTEUS ACULEATUS		2	2	65.5	65. to 66.	5.560
ONCORHYNCHUS KETA		16	16	119.5	75. to 146.	311.650

Location : 5 MI OFF GALIANO IS
Stn. code: 690324

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 24.0 min. W

Date: 7/16/1969

Time set: 1610 Duration: 15. min.

Heading : degrees

Tow number : 24
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		1040	65	30.6	26. to 36.	7.090
ENGRAULIS MORDAX MORDAX		7648	100	31.1	14. to 40.	10.410
LAMPETRA AYRESI		4	4	177.8	148. to 193.	27.610
GASTEROSTEUS ACULEATUS		2	2	69.5	64. to 75.	6.150
ONCORHYNCHUS KETA		11	11	111.2	71. to 177.	200.720

Location : VALDES IS
Stn. code: 690325

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 37.0 min. W

Date: 7/16/1969

Time set: 1655 Duration: 15. min.

Heading : degrees

Tow number : 25
Cruise : 3

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		51	51	28.6	18. to 33.	3.660
ENGRAULIS MORDAX MORDAX		422	100	29.5	14. to 43.	8.140
SYNGNATHUS LEPTORHYNCHUS		2	2	34.5	10. to 59.	0.049
GOBIIDAE (FAMILY)		2	2	17.0	17. to 17.	0.040

Location : THRASHER ROCK
Stn. code: 690326

Lat: 49 deg. 9.0 min. N
Long: 123 deg. 36.0 min. W

Date: 7/16/1969

Time set: 1745 Duration: 15. min.

Heading : degrees

Tow number : 26
Cruise : 3

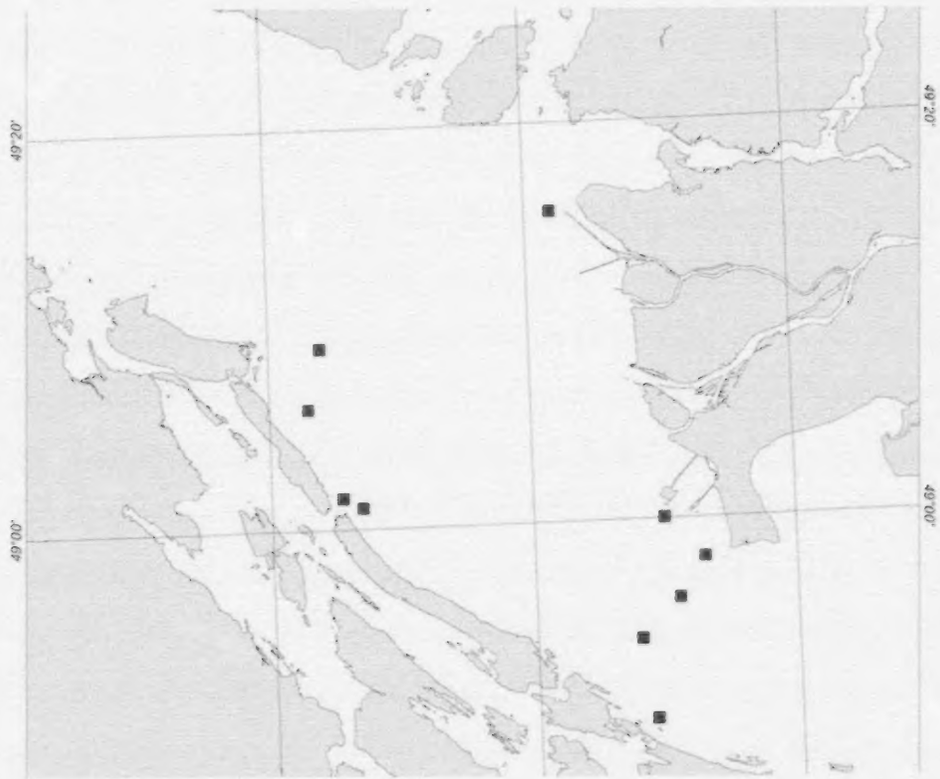
Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		4	4	33.5	28. to 47.	0.790
ENGRAULIS MORDAX MORDAX		23	23	24.8	16. to 35.	1.010
SYNGNATHUS LEPTORHYNCHUS		9	9	37.6	16. to 57.	0.160
GOBIIDAE (FAMILY)		2	2	13.5	13. to 14.	0.020
PLEURONECTIDAE (FAMILY)	T1	1	1	9.0	9. to 9.	0.010
PLEURONECTIDAE (FAMILY)	T2	4	4	15.8	12. to 20.	0.110
GASTEROSTEUS ACULEATUS		4	4	67.0	64. to 69.	10.340
ONCORHYNCHUS KETA		17	17	97.4	73. to 131.	180.380

5.1.3. Data for 1973



Location : BELLE CHAIN ISLETS
Stn. code: 730104

Lat: 48 deg. 50.0 min. N
Long: 123 deg. 11.0 min. W

Date: 7/26/1973

Time set: 1118 Duration: 15. min.

Heading : degrees

Tow number : 4
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	52	52	66.1	50. to 91.	116.980
CLUPEA PALLASII	J	9	9	122.4	106. to 134.	155.860
ONCORHYNCHUS KETA		4	4	105.0	85. to 125.	47.420
ONCORHYNCHUS TSHAWYTSCHA		1	1	187.0	187. to 187.	96.230
GASTEROSTEUS ACULEATUS		3	3	35.0	24. to 48.	1.510
LAMPETRA AYRESI		8	8	205.1	162. to 242.	117.270

Location : 4 MI OFF ACTIVE PASS
Stn. code: 730105

Lat: 48 deg. 54.0 min. N
Long: 123 deg. 12.0 min. W

Date: 7/26/1973

Time set: 1232 Duration: 15. min.

Heading : degrees

Tow number : 5
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	14	14	26.3	22. to 28.	0.710
CLUPEA PALLASII	J	3	3	55.3	53. to 58.	3.820
GASTEROSTEUS ACULEATUS		5	5	22.0	20. to 23.	0.350
ONCORHYNCHUS KETA		1	1	96.0	96. to 96.	8.760
LAMPETRA AYRESI		4	4	170.8	152. to 187.	28.260

Location : 4 MI OFF POINT ROBERTS
Stn. code: 730106

Lat: 48 deg. 56.0 min. N
Long: 123 deg. 9.0 min. W

Date: 7/26/1973

Time set: 1347 Duration: 15. min.

Heading : degrees

Tow number : 6
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	16	16	26.2	23. to 31.	0.670
CLUPEA PALLASII	J	7	7	80.3	64. to 95.	30.400
CLUPEA PALLASII	AD	9	9	118.9	106. to 123.	135.680
LAMPETRA AYRESI		1	1	210.0	210. to 210.	11.040
ONCORHYNCHUS KETA		2	2	125.0	116. to 134.	41.610
ONCORHYNCHUS NERKA		1	1	67.0	67. to 67.	2.930
ONCORHYNCHUS TSHAWYTSCHA		2	2	187.0	164. to 210.	165.660
GASTEROSTEUS ACULEATUS		1	1	25.0	25. to 25.	0.100
SYNGNATHUS LEPTORHYNCHUS		1	1	15.0	15. to 15.	0.001

Location : POINT ROBERTS
Stn. code: 730107

Lat: 48 deg. 58.0 min. N
Long: 123 deg. 7.0 min. W

Date: 7/26/1973

Time set: 1437 Duration: 15. min.

Heading : degrees

Tow number : 7
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		2	2	182.5	155. to 210.	16.790
CLUPEA PALLASII		8	8	26.4	22. to 28.	0.360
ONCORHYNCHUS KETA		1	1	105.0	105. to 105.	10.850
GASTEROSTEUS ACULEATUS	T1	4	4	34.3	30. to 41.	1.160
GASTEROSTEUS ACULEATUS	T2	15	15	69.3	63. to 77.	45.880

Location : TSAWWASSEN DOCK
Stn. code: 730109

Lat: 49 deg. 0.0 min. N
Long: 123 deg. 10.0 min. W

Date: 7/26/1973

Time set: 1524 Duration: 15. min.

Heading : degrees

Tow number : 9
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		6	6	199.8	140. to 230.	67.180
CLUPEA PALLASII	L	67	67	26.9	25. to 30.	3.580
CLUPEA PALLASII	J	1	1	83.0	83. to 83.	5.290
ONCORHYNCHUS KETA		14	14	133.1	116. to 144.	337.420
MALLOTUS VILLOSUS		1	1	42.0	42. to 42.	0.140
GASTEROSTEUS ACULEATUS	T1	1	1	37.0	37. to 37.	0.340
GASTEROSTEUS ACULEATUS	T2	1	1	68.0	68. to 68.	2.440
LEPIDOPSETTA BILINEATA		1	1	22.0	22. to 22.	0.080

Location : POINT GREY
Stn. code: 730115

Lat: 49 deg. 15.5 min. N
Long: 123 deg. 18.0 min. W

Date: 7/26/1973

Time set: 0652 Duration: 15. min.

Heading : degrees

Tow number : 15
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
LAMPETRA AYRESI		7	7	162.3	147. to 185.	44.630
CLUPEA PALLASII	L	9	9	25.4	24. to 27.	0.360
CLUPEA PALLASII	J	2	2	58.5	55. to 62.	2.710
ONCORHYNCHUS KISUTCH		2	2	177.0	154. to 200.	145.630
ONCORHYNCHUS NERKA		1	1	59.0	59. to 59.	1.870
GASTEROSTEUS ACULEATUS	T1	4	4	32.5	20. to 40.	1.060
GASTEROSTEUS ACULEATUS	T2	5	5	61.8	59. to 64.	9.100

Location : ABOVE PORLIER PASS
Stn. code: 730119

Lat: 49 deg. 1.5 min. N
Long: 123 deg. 34.5 min. W

Date: 7/23/1973

Time set: 1434 Duration: 15. min.

Heading : degrees

Tow number : 19
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		22	22	24.6	21. to 30.	0.840
ONCORHYNCHUS KETA		4	4	124.3	121. to 130.	74.120
GASTEROSTEUS ACULEATUS	T1	1	1	27.0	27. to 27.	0.130
GASTEROSTEUS ACULEATUS	T2	1	1	74.0	74. to 74.	3.040
HEMILEPIDOTUS SPINOSUS		1	1	21.0	21. to 21.	0.110
LEPIDOPSETTA BILINEATA		3	3	14.0	12. to 18.	0.060
SCORPAENICHTHYS MARMORATUS		3	3	5.7	5. to 6.	0.003
RHINOGOBIOPS NICHOLSI		1	1	8.0	8. to 8.	0.002
SYNGNATHUS LEPTORHYNCHUS		1	1	9.0	9. to 9.	0.001
SEBASTODES Type 2	T1	7	7	7.7	4. to 16.	0.080
SEBASTODES Type 2	T2	6	6	18.5	15. to 26.	0.370
SEBASTODES Type 2	T3	2	2	15.0	14. to 16.	0.090

Location : BELOW PORLIER PASS
Stn. code: 730120

Lat: 49 deg. 1.0 min. N
Long: 123 deg. 33.0 min. W

Date: 7/23/1973

Time set: 1529 Duration: 15. min.

Heading : degrees

Tow number : 20
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		3	3	24.3	21. to 27.	0.120
ONCORHYNCHUS KETA		1	1	121.0	121. to 121.	15.580
GASTEROSTEUS ACULEATUS		1	1	23.0	23. to 23.	0.080
SYNGNATHUS LEPTORHYNCHUS		3	3	28.3	22. to 32.	0.025
LEPIDOPSETTA BILINEATA		1	1	24.0	24. to 24.	0.080
SEBASTODES Type 2	T2	3	3	20.3	15. to 27.	0.230
SEBASTODES Type 2	T3	2	2	8.0	6. to 10.	0.020

Location : VALDES IS
Stn. code: 730121

Lat: 49 deg. 6.0 min. N
Long: 123 deg. 37.0 min. W

Date: 7/23/1973

Time set: 1303 Duration: 15. min.

Heading : degrees

Tow number : 21
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII		93	50	24.9	19. to 30.	4.010
ONCORHYNCHUS KETA		1	1	71.0	71. to 71.	3.680
GASTEROSTEUS ACULEATUS		1	1	21.0	21. to 21.	0.060
SEBASTES CAURINUS		1	1	18.0	18. to 18.	0.050
CITHARICHTHYS SORDIDUS		1	1	12.0	12. to 12.	0.010

Location : THRASHER ROCK
Stn. code: 730122

Lat: 49 deg. 9.0 min. N
Long: 123 deg. 36.0 min. W

Date: 7/23/1973

Time set: 1154 Duration: 15. min.

Heading : degrees

Tow number : 22
Cruise : 1

Remarks : Two boat surface trawl

Vessel : A.P. Knight

CATCH

Taxon	Type	Number caught	Number samp.	Average length (mm.)	Range of lengths sampled (mm.)	Sample weight (g.)
CLUPEA PALLASII	L	231	50	25.5	21. to 33.	8.700
CLUPEA PALLASII	J	2	2	60.0	55. to 65.	2.680
CLUPEA PALLASII	AD	1	1	145.0	145. to 145.	25.680
ONCORHYNCHUS KETA		1	1	80.0	80. to 80.	5.100
ONCORHYNCHUS TSHAWYTSCHA		1	1	90.0	90. to 90.	10.230
SYNGNATHUS LEPTORHYNCHUS		2	2	39.0	36. to 42.	0.030
LEPIDOPSETTA BILINEATA		2	2	19.0	17. to 21.	0.110
SEBASTODES Type 2		1	1	6.0	6. to 6.	0.001